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# THE AMERICAN JOURNAL OF PHARMACY.

FEBRUARY, 1886.

## FABIANA IMBRICATA; OR PICHI.

By A. B. LYONS, M. D.

In the December issue of the *Therapeutic Gazette* there appeared an article by Dr. Rusby with reference to a new drug which, under the name of pichi (pronounced pee'chee), has acquired considerable reputation in Chili in the treatment of urinary affections. Specimens of the drug have been sent to Europe and to the United States, and its virtues will no doubt be speedily put to the test of clinical experiment.

Meanwhile, opportunity is afforded to make acquaintance from the standpoint of the botanist and of the chemist with the new drug, and I take pleasure in presenting here some preliminary notes on its natural history.

The drug is the product of a solanaceous plant—*Fabiana imbricata*, *Ruiz et Pavon*; subtribe *Fabianæ*, *Miers*—a shrub or small tree, growing on rocky, sterile hill-tops in Chili. As imported, it consists of the branches and leafy branchlets of the shrub, and these bear a close resemblance in general aspect to those of a cedar. The highly resinous character of the drug and its aromatic odor and taste, recall the familiar *arbor vitæ*, although the foliage bears a closer resemblance to that of the red cedar. In absence of flowers and fruits, even an accomplished botanist would scarcely recognize under such a disguise a member of the natural order solanaceæ.

The accompanying illustrations render minute description of the drug superfluous. The larger stems, 1 to 2 cm. in diameter, are covered with a thin, rather smooth bark, obscurely wrinkled longitudinally, the surface more or less distinctly tuberculate, color brownish gray, with darker or lighter patches. The bark is firmly adherent over a yellowish-white, tough, compact wood. The smaller twigs, 2 to 5 mm. in diameter, are of a darker color, and show (when stripped) at regular intervals scars indicating the points of insertion of the minute leaf-sprays. The leaves are minute scales, about 1 mm. in length, closely imbricated on these numerous sprays.

Dr. Rusby gives the following graphic description of the shrub as he saw it growing in its habitat: "Growing upon high, dry hill-tops, where there is a somewhat sparse vegetation, its plume-like sprays, with their peculiar light, bluish-green color, present a rather pretty

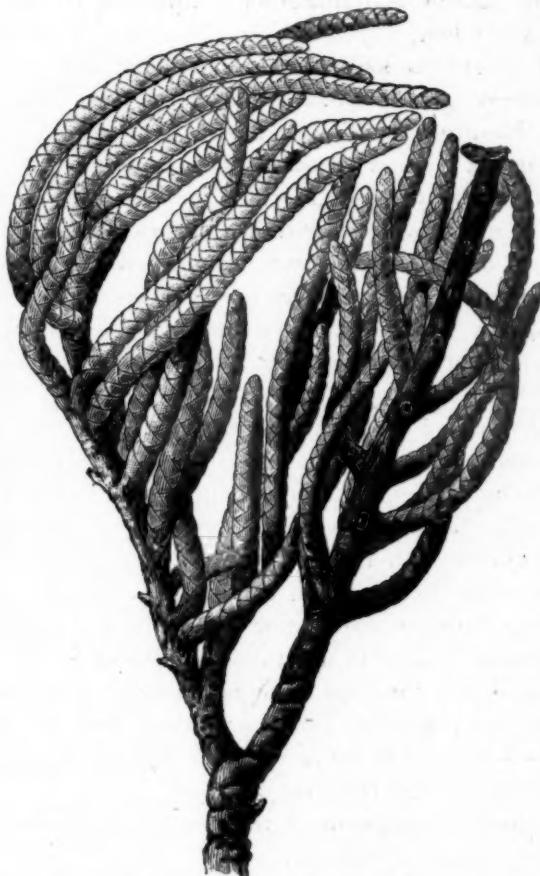


Branch of *Fabiana imbricata*.  
(Natural size.)



Stems of *Fabiana imbricata*.  
(Natural size.)

appearance against the sky, although the shrub is somewhat straggling; more so here than in the south, where it becomes a small tree. Seeing one of these sprays without flowers for the first time, it is hard to realize that it is not a conifer, and seems almost incredible that it is in the tobacco family. Handling it, I was astonished at



Branchlet of *Fabiana Imbricata*; 3 diameters.

the great amount of resin with which all its tender parts are covered, this coating, perfectly impervious to water, being an admirable provision of the plant against the loss of its small supply of water during the long droughts of this region." In further description of the plant, the Doctor says: "The minute branchlets are densely

crowded and terminated in the second year by the solitary flower. The white, nerved, withering, persistent corolla is  $\frac{1}{2}$  inch long, four times the length of the bell-shaped calyx, funnel form, with fine lobes. Fruit an oblong, ovoid, light-brown, crustaceous capsule,  $2\frac{1}{2}$  lines long; seeds about four,  $\frac{1}{2}$  line long."

From Dr. Manuel S. Ramires, of Valparaiso, Dr. Rusby learned that the remedy had proved curative in a case of calculous disease which had baffled the skill of physicians, and, the patient being a man of influence, a wide-spread interest had been awakened in the drug. Dr. Ramires had himself made a pretty careful study of the drug, finding it a diuretic of considerable importance, but inapplicable to cases of kidney disease in which there was degeneration of the excreting organ. He considered it a valuable remedy in catarrhal inflammations of the urinary tract, but believed that its action in restoring impaired digestive power was even more important than its diuretic property. He had found it also a hepatic stimulant, although this action might be secondary, and dependent upon improved digestion.

Dr. Rusby made a chemical examination of the drug, ascertaining that its abundant resin was soluble in ether, to a certain extent in ammonia, being reprecipitated by sulphuric acid, and that its alkaline solutions had a most intense blue fluorescence. Aqueous solutions gave no reactions with the ordinary reagents for alkaloids, except solution of iodine in potassium iodide. On the strength of this latter reaction, however, the Doctor was inclined to regard the bitterness of the drug as due to an unknown alkaloid. The Doctor was unable to make any complete examination of the drug, owing to lack of reagents and laboratory facilities; indeed, with the means at his disposal, he is entitled to much credit for having so clearly indicated the direction of further research.

A preliminary examination of the drug by the writer has yielded the following results of interest:

Ten grams of the drug in fine powder was treated with 100 c. c. of petroleum ether. After macerating twenty-four hours, with occasional shaking, crystals were observed to be forming on the sides of the bottle. After several day's maceration, 25 c. c. of the petroleum ether was evaporated and found to contain 280 milligrams of extractive matter, reduced by heating for some time at 105° C. to 260 mg., the loss in weight due to volatilization of essential oil, and traces of

moisture. The petroleum ether had extracted more than 10 per cent. of the weight of the drug. Of this extract alcohol dissolved all but 30 milligrams, the residue consisting of fatty and waxy matter, which in burning produced an odor similar to that of burning india-rubber.

Water dissolves a very small portion of the extract, producing a somewhat bitter solution, which, on addition of ammonia, becomes strongly fluorescent. Of the resinous portion, taken up by alcohol, ammonia dissolves only a part, producing a solution having a terebinthinate bitter taste.

Ether extracts about 33 per cent. of the drug, the extract having the consistence of a soft resin, with the characteristic odor and taste of the drug. If to the ethereal solution a few drops of an alcoholic solution of ammonia are added, a precipitate is at once produced, which gradually assumes the crystalline form. The same thing is true of the solution obtained with petroleum ether. The crystals are white, delicate needles or scales, tasteless, insoluble in water, soluble in chloroform, hot alcohol even when somewhat dilute, crystallizing readily from its solutions in most of these solvents fusible at a somewhat elevated temperature, burning with a smoky flame.

It is apparently indifferent to the action of acids and alkalies, except that it is thrown out of some of its solutions, as already stated, by alkalies. Probably it is inert, but we must not too hastily draw this conclusion from its insolubility and tastelessness.

Tinctures of pichi made with moderately strong alcohol, deposit crystals also of this substance, which is the same, no doubt, as that which crystallizes spontaneously from the solution in petroleum ether.

The ethereal extract contains a larger proportion than the benzin extract of the fluorescent principle to which reference has been made. This principle resembles in its general properties æsculin; it is soluble in petroleum ether sparingly; in alcohol freely; in ether, chloroform and other similar solvents. Cold water dissolves it sparingly, hot water more freely; from its aqueous (acid) solution it may be removed by shaking with chloroform, or a mixture of chloroform and ether. It is not easily induced to crystallize, and in this respect differs from æsculin. This may be due, however, to the presence of impurities, and my experiments have not been sufficiently numerous to warrant me in saying that it is not crystallizable.

A tincture of the drug, prepared with 75 per cent. alcohol, was

precipitated by pouring into a large volume of water. The solution was filtered, concentrated, considerable resinous matter separating during this operation. When reduced to a small volume, the solution was shaken with chloroform, and the resin which had separated was washed also with the chloroform. The chloroformic solution, when evaporated, left a residue of the consistence of a soft resin, of a rich, red-brown color. This was treated with hot water which dissolved a large part of it. The solution was intensely bitter. On adding neutral acetate of lead, a scanty buff-colored precipitate was thrown down. This was removed by filtration, and basic acetate of lead was then added, producing a bulky, slimy, bright-yellow precipitate, which was readily soluble in acetic acid and reprecipitated by ammonia. The filtrates from both of these precipitates, and the wash waters, also, were strongly fluorescent. The precipitates themselves, after moderate washing, were decomposed by dilute sulphuric acid, and the solutions thus obtained both exhibited fluorescence, that from the yellow precipitate becoming of a deep yellow color on addition of ammonia. Whether the fluorescent principle was incompletely precipitated by one or the other of the reagents, or whether there are two or three distinct fluorescent compounds present, these experiments did not decide, and the question remains an open one, which, however, continued investigation may enable me to decide. In all cases the fluorescent solutions have been observed to be bitter, and I am strongly inclined to regard the bitterness as belonging to the fluorescent substance.<sup>1</sup>

Not having succeeded in isolating this substance, I am not able to affirm that it is a glucoside, but this is extremely probable. The impure substance produces with nitric acid and ammonia color reactions similar to those obtained from aesculin, and after boiling with an acid reduces copper solutions.

<sup>1</sup> In continuing the study of these compounds, the writer reports that he finds the fluorescence to reside mainly in the substance precipitated by subacetate of lead. This substance, when freed from the lead, proves to be partially soluble in chloroform. The portion dissolved by chloroform readily assumes the crystalline form; it is exceedingly bitter, but apparently not more so than the portion of the original aqueous solution not precipitated by lead subacetate. It gives with nitric acid, followed by ammonia, the same color reaction as aesculin, and the color of its ammoniacal solution, and the intensity of the blue fluorescence of its dilute solution, are identical with those of aesculin, but its bitterness and its solubility in ether appear to constitute differential characteristics.

By treating the drug with Prolius' solution, I obtained an ethereal fluid from which acidulated water removed a not inconsiderable quantity of alkaloid. The concentrated solution gave with Mayer's reagent a heavy white precipitate; with picric acid a yellow; with phosphomolybdic acid a yellowish white; with tannin a tawny; with iodine solutions a brown precipitate. The solution had a bitter taste, and when evaporated yielded minute, well-defined crystals. The quantity of alkaloid is small, certainly less than 0·1 per cent., but this quantity is not so minute that we are warranted in concluding of necessity that the drug owes its efficacy to other constituents. Whether it is a new alkaloid, however, remains to be determined; also, what physiological, toxic or therapeutic properties it may have, and these questions can be solved only when a sufficient quantity of the alkaloid has been prepared to render its study possible.

Should the alkaloid prove to be a new one, it will naturally take the name fabianine.

To sum up the results justified by the preceding examination, Pichi contains—

1st. A minute quantity of some alkaloid, probably peculiar to the drug, and capable of forming crystallizable, bitter salts.

2d. A neutral, crystallizable principle, rich in carbon, insoluble in water, tasteless, and probably inert.

3d. A fluorescent body (perhaps more than one) closely resembling aesculin.

4th. Volatile oil.

5th. A bitter resin, probably complex in composition, present in great abundance, soluble in alkalies, reprecipitated by acids, not fluorescent, soluble in ether and chloroform, very sparingly in water and in petroleum ether.

It seems probable that the three last named constituents are the important ones, unless, indeed, there be a bitter in addition to the fluorescent principle, which dissolves somewhat freely in water. The tincture of the drug has a very clinging, disagreeable bitter taste, and unless an alkali is added, it precipitates much resin when mixed with water.

We may hope that before long clinical experiment will determine positively what therapeutic value the drug possesses, and which of its constituents may be regarded as its active principle.

MATERIA MEDICA OF THE NEW MEXICAN  
PHARMACOPCEIA.

BY THE EDITOR.

Continued from page 24.

Palo del muerto, *Ipomoea muricoides*, *Kunth*; *Convolvulaceæ*; in the Mexican valley, Tenango, &c. The decoction of the branches is used in baths against paralysis, and in the same manner is also employed *I. arborea*, *Kunth*, which is abundant in the interior of the country. The former plant yields by incisions a gum-resin, and contains, according to Gomez, tannin, gum, sugar, red coloring matter and a white crystalline principle, which is soluble in ether and chloroform, and has an aromatic odor similar to that of the flowers.

Palo mulato de México, *Xanthoxylon pentanome*, *De Cand.*; *Rutaceæ*; in the Mexican valley. The wood comes in pieces of different dimensions. The bark is thick, hard, covered with a yellowish, slightly adhering layer; the periderm underneath is greenish ash-colored in its outer layers, and red brown in the inner layers; transverse fracture uneven, showing alternating reddish and whitish or gray lines; liber chalky white; inodorous; taste on mastication pungent and acrid; wood yellowish-white, coarse. According to Mendez the drug contains resin, tannin, coloring matter, saponin-like substance, glucose, gum, extractive and a crystalline nitrogenous body which is soluble in alcohol and chloroform, and is probably an alkaloid. It is tonic, stimulant and antisyphilitic, and in Veracruz the infusion is used in black vomit.

Papayo, *Carica Papaya*, *Lin.*; *Papayaceæ*; in Yucatan, Cordoba, Puebla and other hot and moist localities. The juice of the green fruit contains a caoutchouc-like substance, fat, resins, albumin, bitter extractive, malic acid, pectin, salts, and a peculiar ferment, papain. Dr. José Font recommends the juice for the cure of dyspepsia; a spoonful of the juice acts as a vermicide. The root, leaves and seed have similar properties. The juice of the ripe fruit is made into a syrup which is employed for the cure of bronchitis.

Parietaria, *Parietaria pennsylvanica*, *Muhlenberg*; *Urticaceæ*; in Mexico, &c. Diuretic. The infusion is made from 5 to 14 gm. of the plant to the liter. Dose of the extract 1 to 6 gm.

Peonía verdadera, *Paeonia officinalis* *Lin.*; *Ranunculaceæ*; cultivated. The root and seeds are employed to a limited extent; antispasmodic; dose 0·30 to 2 gm. The drug is popularly used in convul-

sions of children. The tubers of *Cyperus rotundus Lin.*, which is known as peonia del país, are improperly used as a substitute for the preceding.

Picoso, *Croton adenaster*, *Jimenez*; *Euphorbiaceæ*; in Querétaro. Stem cylindrical, stellately hairy; leaves ovate-lanceolate, covered with stellate hairs principally upon the lower surface; the margin with numerous pedicillate pyriform yellow glands; stipules with like glands; inflorescence in small monoeious racemes, having the pistillate flowers at the base; fruit spherical, hairy, three-celled, three-seeded, of a burning taste. Laso de la Vega (*Observ. Méd.* iv, 17) found in the plant black resin soluble in ether, acid oleo-resin, volatile balsamic matter, tannin, various coloring matters, extractive and salts. The plant is used as an antiperiodic, an infusion being prepared from 1 or 2 gm. of the leaves to 500 gm. of water.

Pipitzahoac, *Trixis fruticosa*, *C. H. Schultz*, Tr. Pipitzahuac, *G. Schaffner*; *Compositæ*; in Tenango, the eastern mountains of the Mexican valley, &c. The rhizome with the roots is employed. Rhizome horizontal, tortuous, covered with a thick brown layer; with stem-scars on the upper side; rootlets numerous, cylindrical, about 5 Mm. ( $\frac{1}{2}$  inch) thick, dark gray, longitudinally wrinkled, and near the meditullium with a reddish-yellow crystalline powder of the natural resin having an acrid taste. The virtues of the drug are due to this resin. Drastic purgative; dose 4 to 8 gm. (see also *Amer. Jour. Phar.* 1884, pp. 185, 193). The powdered drug or the acid, internally administered, usually imparts a greenish color to the urine.

The Pharmacopeia recognizes also *acidum pipitzahoicum*, which is directed to be prepared from the roots deprived of the rhizome, which are washed with water, dried, powdered, exhausted with 82 pr. ct. alcohol, and the strong tincture precipitated by slowly pouring it into water. Thus prepared it is an active drastic in doses of 0.20 or 0.30 gm. and forms a crystalline powder varying in color between bright canary yellow and deep reddish; soluble in alcohol, ether, chloroform and carbon bisulphide, fusible to a reddish-yellow liquid, which gives off yellow vapors condensing partly as an oily liquid and partly as brilliant yellow prisms; the vapors are inflammable and burn with a bright and sooty flame. Its most characteristic reaction is the behavior with alkalies: on adding a drop of its alcoholic solution to water, followed by a little ammonia, a violet color is produced. R. Anschütz and F. Mylius have recently (*Berichte*, 1885) shown that the above

compound belongs to the class of quinones, and the name *perezone* was proposed for it by the latter.

For the preparation of *pipitzahoina*, the crude pipitzaholic acid is directed to be put in a thin layer upon a porcelain plate, covered with a glass funnel; a gentle heat is applied by means of a sand bath, and when the sides of the funnel are covered with crystals, the white ones are collected, and those near the lower edge, which are usually colored, are again sublimed. The compound forms prismatic needles and crystallizes from its solutions in plates; it is white, fusible, volatile, neutral to litmus paper, inodorous and tasteless, but finally slightly bitter. It is insoluble in water, soluble in alcohol, ether and chloroform, also in potassa, the latter solution being precipitated by acids, while the alcoholic solution is precipitated by sulphuric acid, the precipitate being soluble in alcohol. Nitric acid converts the compound into a yellow amorphous resin.

*Plátano.* The species most common in Mexico are *Musa paradisiaca*, *Lin.*, known as plátano largo (plantain) *M. sapientum*, *Lin.*, the plátano guineo or camburi (banana), *M. regia*, *Lin.*, the plátano dominico or costeño, and *M. coccinea*, *Andrews*, the plátano rojo de China. The fruit contains sugar, gum, malic acid, gallic acid, albumen and pectin, and in the green state much starch. The juice of the stem is used as an astringent and the fruit of the banana is popularly regarded as pectoral; the green as well as the ripe fruit is alimentary.

*Pochote*, *Eriodendron anfractuosum*, *De Cand.*; *Bombaceæ*; in hot and damp localities. The gum which exudes from the stem, is used in enteritis; the fruit is comestible and the cotton which surrounds the seeds is utilized for filling cushions, &c. The same uses are made of the *ceiba espinosa*, *Eriodendron leiantherum*, *De Cand.*

*Polygala mexicana*, *Polygala mexicana*, *Flor. Mex. ined.*, *Pol. scotaria*, *Kunth*; *Polygalaceæ*; near the city of Mexico. The root is mostly simple, slender, tortuous, in the centre and in the outer layers resembling senega root, as well as in odor and taste. Simeon obtained from it sugar, starch and bitter extractive, the latter in about one half the proportion obtainable from senega. In small doses of about 0·20 gm. it is used as a tonic, and in doses of 2 or 3 gm. as an emetic.

According to Schiede, *Spermacoce diversifolia* (*Rubiaceæ*) which has different properties, is used in place of polygala; and Cal states that *Pol. tricosperma* is substituted for senega. *Pol. rivinæfolia* is found

in Ario and in Morelia; Pol. lutea in Guadalajara, Pol. amara in Tepatitlan and Pol. americana in Veracruz.

Ponchishuis, *Asclepias currasavica*, *Lin.*; Asclepiadaceæ; in Huasteca, Yucatan, &c. From 3 to 9 drops of the milk-juice act as a powerful emeto-cathartic, and it is also used as an antiperiodic and vermifuge. The extract of the juice is violently sternutatory, and to the stem are attributed the same properties as to sarsaparilla and China root. Dr. Leon of Tabasco believes the root to be useful in asthma and other nervous affections; in doses of 1·0 to 1·5 gm., taken in three portions, it acts as an emetic, and in smaller quantities it is purgative. The leaves, topically applied, are said to cure cancer; according to Dr. Hamilton they possess useful hæmostatic and antiblennorrhagic properties. All preparations of this plant should be used with great care.

Prodigiosa, *Athanasia amara*, *Cervantes*; Compositæ; in the Mexican valley. Leaves rough, orbicular, with rounded lobes; heads hermaphrodite; involucre calyculate; corolla yellow, tubular, five-lobed; style bifid, terminating in two small tufts of hairs near the stigmatic lines; akenes crowned with a chaffy pappus. The entire plant is used as a bitter tonic and vermifuge.

Quauchichic, *Carya ovata*; Juglandaceæ; in the mountains near the Mexican valley. The bark enjoys considerable reputation for the cure of atonic diarrhoeas.

Quaumecatl, *Serjana mexicana*, *Willdenow*; Sapindaceæ; in hot and moist localities. The infusion of the root is diuretic.

Quelite, *Chenopodium viride*, *Lin.*; Chenopodiaceæ; in the Mexican valley. The leaves are alimentary and emollient.

The following well known drugs have been admitted: Quina (cinchona barks), Rábano cultivado (radish), Rábano rustico (horse-radish), Rapóntico (European rhubarb), Romero (rosemary), Rosa de Castilla (rose petals), Rubia or Granza (madder), Ruda (rue), Ruibarbo de China, Sabina, Sagapeno, Sagú (sago), Salep, Sándalo cetrino (sandal wood), Sándalo rojo (red saunders), Sandía or Zandía (water-melon seed), Sangre de drago (dragon's blood), Santónico, Sassafrás (root bark), Sauz (willow bark), Sen (senna leaves), Serpentaria de Virginia (Virginia snake root), Simaruba, and Sumbul.

Raíz de China de México, *Smilax pseudo-china*, *Schlechtendal*; Smilaceæ; in the states of Morelos, Colima, &c. The root is large, oblong, tuberous, externally bright red, internally reddish and when cut with a saw, of a mahogany color, astringent and somewhat bitter;

in the dry state readily attacked by insects. It is used as a substitute for the root of Smilax China, *Lin.*, the decoction being employed in dropsy and as a diaphoretic and depurative.

Raíz del manso, *Echinacea heterophylla*, *Don*, *Helianthus glutinosus*, *Fl. Mex. ined.*; *Compositæ*; in Puebla, &c. Cal (*Mat. Med. Mex.*, 1832) describes the root as being tuberous, cylindrical, externally gray and striate, internally white, becoming yellowish; when cut in the fresh state it has an odor resembling turpentine and emits a sticky juice, which on drying is resinous. It contains 12·11 resin, 15·62 gum, and 46·87 extractive. It has considerable reputation as a vulnerary, and the decoction is used in dysentery. The resin has a clove-like color, a saffron-like odor, and a taste which is bitter, afterward acrid and persistent.

Romeritos, *Chenopodina linearis*, *Moquin*; *Chenopodiaceæ*; in Central Mexico. The leaves are used for emollient cataplasms and as a pot-herb.

*Rubia lœvigata*, *De Cand.*, grows in the neighborhood of the capital, and has the same tinctorial properties, though in a less degree than the madder of commerce.

*Sagittaria*, *Sagittaria sagittæfolia*, *Lin.* *Alismaceæ*; in the Mexican valley, also in the United States. The rhizome is astringent; the tubers are comestible and may be used for obtaining starch.

*Salvia*. Instead of *S. officinalis*, *Buddleia globosa*, *Lamarc*, *Serophulariaceæ*, is usually found in the shops of the city of Mexico, and the *salvia poblana*, *Verbena callicarpaefolia*, *Kunth*, *Verbenaceæ*, is very generally employed. The latter has a quadrangular stem; leaves opposite, ovate-elliptic, dentate, rugose, hairy and spiny on the upper side, and covered with canescent hairs beneath; bracts large, many-nerved, of a handsome violet color; calyx bifid, externally villous and hispid; corolla elongated, funnel-shaped, glandular above; odor strong and agreeable; taste pungent and somewhat bitter.

In other parts of the country the following species are employed: *Salvia polystachya*, *Ortega*, in Guadalajara; *S. chrysantha*, *Martius*, in Oaxaca; *S. aspera*, *Martius*, in Tehuacan; *S. Sessei*, *Benth*, in Tuxpam; *S. regia*, *Cavanilles*, in Villalpando and Aguascalientes; *S. fulgens*, *Cav.*, in the Mexican valley, &c.

*Samatito*, *Ficus complicata*, *Kunth*; *Urticaceæ*; in hot districts. The milk juice is used as a resolvent, the same as that of *F. benjamina*, *Lin.*, which is commonly known as "amate."

Sangre de drago. Besides the commercial dragon's blood, this name is applied in Mexico to the resins of several plants, chiefly to that of *Pterocarpus Draco Lin.* (Leguminosæ) and of *Croton sanguiniflum*, *Kunth* (Euphorbiaceæ), the latter known as "Ezquahuitl" or "Árbol de sangre." The juice and the branches of these plants are astringent.

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## ON WHITING AND ITS MANUFACTURE.

BY JOSEPH W. ENGLAND, PH. G.

(Read at the Pharmaceutical Meeting, January 19th.)

Among the varied industries whose products have found general employment and received numerous applications in the arts and sciences, the preparation of purified chalk may properly claim our attention, and a few remarks incidental to its commercial history and preparation for market, may be of interest.

Amongst its many applications we quote: For medicinal purposes in the form of the so-called "Creta Præparata" we find it internally employed for its well-known antacid and astringent qualities, or externally for the healing of burns, ulcers, intertrigo and other cuticular affections; and then, chemically, for the preparation of various lime-salts. Moulders use its finest grades, in connection with plastic clay and glue, in the mouldings upon picture frames, preparatory to gilding; while in oil-cloth manufacture, it serves as a basis in the application of other materials. Mixed with a variety of colors, it forms the water-color pigments, and is also utilized in the sizing of wall papers. When strongly heated it may readily be converted into lime and used either as a cement in connection with other materials or for fertilizing land; the immediate effect being to render the soil more able to retain moisture and to improve its texture. It is very largely used as a basis for some cheap colored paints, but its great lack of the body that characterizes the lead product, prevents its more general adoption, except as an adulterant. Latterly, it has been applied in the preparation of carbonated waters by mineral water manufacturers, some of whom state that the relative proportion of marble dust used to whiting is as 1:3 or 4. Its well-known cleaning properties upon glass, or metallic surfaces, when freed from hard, crystalline siliceous particles, to prevent scratching, and its use in making putty with linseed oil, are too well-known to require more than mere passing comment.

The main source of supply of commercial chalk, is from the cliff-hills along the shores of the North Sea and the banks of the English Channel, where it is found in deposits of vast extent, consisting of foraminiferous microscopic shells, through which are occasionally distributed more or less rounded nodules of flint, together with, very rarely, a specimen of petrified fish. Chemically, it is almost wholly calcium carbonate ( $\text{Ca CO}_3$ ), with small and varying traces of ferric oxide ( $\text{Fe}_2\text{O}_3$ ), alumina ( $\text{Al}_2\text{O}_3$ ), magnesia ( $\text{MgO}$ ) and silica ( $\text{SiO}_2$ ). The so-called "French Chalk" or Talcum, P.G., does not contain any calcium carbonate, but is a hydrated magnesium silicate ( $4\text{MgSiO}_3 \cdot \text{SiO}_2 \cdot 4\text{H}_2\text{O}$ ).

Next, and of far less importance than the common, white variety, we have "Black Chalk," a soft carbon-like schist that may be used in writing or drawing; "Brown Chalk," an umber-like body, and "Red Chalk" or "Riddle," an impure earthy variety of haematite. The red varieties, in general, may contain as much as 9·28 per cent. silica, 9·6 per cent. ferric oxide, and 1·43 per cent. alumina<sup>1</sup> and the Norfolk red chalks, in particular, leave, on treatment with acids and subsequent drying, 9·3 per cent., argillaceous residue, consisting of water, ferric oxide and alumina, with a small proportion of magnesium and potassium.<sup>2</sup>

Chalk is brought from Hull or London, England, on board ships as ballast, in the form of yellowish-white or white (with occasional streaks of red from traces of ferric oxide), insoluble, soft and friable earth-like masses, irregular in shape and size, variable in weight and having a rough, irregular fracture, and insipid taste; specific gravity varying about from 2·4 to 2·6; absorbent of moisture; containing 5, 10, 20, or more, per cent. of water. Cliffstone is the name given to a variety of chalk, from which it differs, mainly, in being much more hard and stone-like.

For the year ending June 30, 1884, the amount of unmanufactured chalk admitted into the U. S. ports,<sup>3</sup> duty free, amounted to 33,677 tons, having a value of \$26,856, while unmanufactured cliffstone, a variety of chalk previously referred to, amounted to 6,003 tons, having a value of \$11,701. Independently of this, for the same year, 5,000 to 6,000 tons were withdrawn from private storehouses, where

<sup>1</sup> *Chem. News*, 1862, Vol. 6, p 313. Chapman.

<sup>2</sup> *Chem. News*, 1875, Vol. 36, p. 199. Church.

<sup>3</sup> *Commerce and Navigation (U. S.) Reports*, 1884, p. 182.

they had remained on storage from previous years, and also used; making the total sum used about 45,000 tons.

After importation into Boston, New York, Philadelphia, Baltimore, or New Orleans, it is there purified and prepared at "Whiting Works." Of these there are in Philadelphia eight in active operation, with an estimated yearly capacity of 22,000 tons, or 50 per cent. of the whole product manufactured in the country.

The source of supply is not necessarily limited to England, since France exports from her shores a much finer crude product; the only objection to whose employment, in certain cases, being its lack of body, yet, if desired, the English article and it may be mixed with the best of results. In our country an inferior quality, and apparently limited supply, is furnished by the states of North Carolina, Colorado, and the interior of Dakota, which has, as yet, failed to receive any especial attention, or whose development has not been deemed of sufficient importance to prosecute.

On its reception in the yards of the refining-works, the crude chalk is stored in wooden bins, from whence, as needed, it is placed on wheelbarrows and shoveled from there into large cylindrical tanks, through which a stream of water is constantly rushing, where it is ground in water by massive rotating disks of iron, weighing from 4 to 5 tons each.

From these tanks, by the current of running water, through an outlet on the side, flows the milky stream of suspended chalk, the impurities of silica and flint having to a large extent remained in the tank, from whence they are removed as occasion may require; the liquid is conducted through irregular, snake-shaped conduits, in order to separate the heavier, coarser particles of partly crushed chalk that may have been forced along by the current of liquid into a larger, longer and straight conduit, leading in succession to enormous wooden settling bins, having a volumetric capacity of over 5,000 gallons each of water. In the establishment visited, there were sixteen of these bins, placed successively along the whole side of the building. Now the running stream slowly flowing from the first to the last bin, through the long wooden channel provided for it and connected with each bin in its passage, gradually deposits by gravity, on standing, the coarse grade in the first, finer in the second, still finer in the third and so on until the last bin is reached, where the deposit is very slow and the product obtained correspondingly fine.

At the base of each of these wooden bins are sluice-gates opening

into large, square, open iron tanks in front, under which is conducted, by draught, a current of strongly heated air from kilns, placed in front, so regulated in temperature as never to exceed 300° F.

At the proper time, which ranges from five to six days for the first, to from six to eight months for the last, each bin is closed, the excess of water drawn off from above, and pumped to a large tank upon the roof of the building, for re-use in grinding crude chalk, and the sluice-gates below are opened to allow the white, viscid mass to flow into the flat, open tanks in front. As soon after heating as the mass becomes sufficiently plastic, it is cut into blocks of about one cubic foot, weighing 20, 30 or 40 pounds. The instrument used to do this division is technically called a "Scorer," and is simply a long, stout pole, at the end of which is attached an L shaped piece of iron. The mass is then again slowly heated, from beneath, to still further expel moisture.

From there these blocks are conveyed on tramways and taken to the drying-room above, where they are exposed on large trays to the continued draughts of atmospheric air, to promote thorough dryness; which point of the process is reached in one or more weeks, according to the condition of the weather. Then these blocks are powdered, bolted, graded and packed in barrels of about 300 pounds each, for shipment, as kiln-dried whiting.

To a limited extent, in comparison with the previously described process, there is another mode of manufacturing practiced, whose only difference consists in the method of drying employed, which, in this instance, is done by simple exposure of the viscid, elutriated chalk to the air, without previously heating to expel contained moisture and then proceeding as before mentioned. This product so obtained, is called air-dried whiting, in contradistinction to the kiln-dried body and must of necessity contain a certain percentage of unexpelled moisture; the presence of which rendering it, by giving what is called "body," more fit for certain uses in the arts than the kiln-dried substance.

In the grades of whiting mainly supplied to markets, samples are presented in the order of their grade of fineness; the lowest grade being mentioned first, the finer second, the still finer third, and so on. A is "Chalk" in crude form. A No. 1, is "Commercial," the lowest grade made from chalk. A No. 2, is "Gilded," the next higher grade made from chalk. A No. 3, is "American Paris White," the finest grade of all made from chalk. On the other hand we have B as

"Cliffstone," from which only one grade is made, and that is shown as *B* No. 1, "Cliffstone Paris White." Each of these grades, here shown, are products of the kiln-dried method, and differ from each other in fineness of powder and certain physical qualities which adapt them for various special uses.

It may be of interest, at this time, to present a table of whiting analyses (kiln-dried product). The specific gravity of each, in the powdered state, was taken in a specific gravity bottle and may vary in some instances from the moisture absorptive power of certain of the powders, hence they must be considered as relatively approximate and not as a standard. Concerning the estimation, of the constituents, alumina, ferric oxide and magnesia, they were present in such small quantities, in chalk and cliffstone, that their determinations were ignored. The moisture was calculated by heating 1 gm. of the powder, of each grade, in an air-chamber, at a temperature of not more than 212° F. (100° C.) for one hour or more, until it ceased to lose weight. The quantity of silica present, which, in the whitings at least, was the amorphous variety, was found by dissolving the dried powder in acetic acid, filtering through tared filters, washing thoroughly with distilled water, and weighing residue on the filter, after thorough drying, as silica. The calcium carbonate was estimated by the difference between the sum of the moisture and silica, and the total weight of the dried powders used (*i. e.*, 1 gm.). Since the crude products vary greatly, and the manufactured goods differ to some extent from each other, according to the maker, the results of the table appended cannot be taken as a standard, but as only an approximate indication of the general constitution of whiting.

TABLE OF WHITING ANALYSES.

Grades.	Sp. gr.	Moisture (pr. ct.)	Ca CO <sub>3</sub> (pr. ct.)	Silica (pr. ct.)
<i>A.</i>				
No. 1, Crude Chalk.....	2·63	5, 10, 20	91, 86, 76	4·
" 2, Commercial.....	2·5	.....	96·5	3·5
" 3, Gilded.....	2·38	.....	97·	3·
" 4, Am. Paris White.....	2·32	.....	98·	2·
<i>B.</i>				
No. 1, Cliffstone.. .....	2·63	5, 10, 20	90·5, 85·5, 75·5	4·5
" 2, C. Paris White.....	2·5	.....	96·	4·
<i>C.</i>				
No. 1, Creta Präparata (U.S.P.)..	2·5	.....	96·	4·
" 2, Calcii Carb. Präc. (U.S.P.)	2·25	.....	100·	.....

Upon examination of this table, it will be seen, from the very mode of preparation, *i. e.*, deposition by gravity on suspension in water, that the density of each product decreases, as the product becomes finer. *Creta Præparata* (U.S.P.) appears to be made from Cliffstone Paris White, and, in density, *Calcii Carbonas Præcipitatus* (U.S.P.) resembles American Paris White. A decrement of the amount of silica present as each sample becomes finer, will also be noticed, and the extreme difficulty of the total separation of silica, by the present method of manufacture, may be readily seen, when a comparison is made between the specific gravities of that substance in its natural amorphous condition with whiting densities. Unfortunately, in the present instance, the two main authorities depended upon differ to some extent with each other. Fownes,<sup>4</sup> indefinitely, gives its density as somewhat above 2, while Frankland and Japp<sup>5</sup> state it to be 2.3. It is more than probable that the latter figure is nearer the correct one, though it may be still higher since Fownes<sup>1</sup> also gives 2.66 as the specific gravity of artificial amorphous silica, while Frankland and Japp<sup>2</sup> claim the same to have a specific gravity of 2.2. There is then, clearly, an error in density on the part of one or both. Of moisture there was none in the samples examined, as obtained by the writer from the manufacturer's hands. Whether all makes will bear out this record is not known, as only the one make was examined.

The point suggests itself, that if a form of calcium carbonate is desired for medicinal uses and is employed under the term "Creta Præparata," which at present is made from Cliffstone Paris White, containing 4 per cent. of silica, why not make a purer preparation by using American Paris White, containing only one-half that quantity of silica, which certainly must be preferable for such uses. A sample of *Creta Præparata*, made from American Paris White, in the familiar nodular form is here presented as C No. 3. The impossibility of making these cones to keep permanently hard, when prepared from precipitated calcium carbonate, may here be mentioned, and arises from the fact that under the microscope, diffused through water, the powder of precipitated carbonate appears in minute crystals, all of equal size, while in the form of whiting, under the same conditions, the appearance is that of minute crystals widely different in sizes, and it seems to be a physical law that when small crystals of equal size are

<sup>4</sup> Fownes *Elementary Chemistry* (Watts) p. 224.

<sup>5</sup> Frankland and Japp's *Inorganic Chemistry*, p. 317.

dried together in the presence of moisture they have much less cohesion with each other than when the reverse is the case. A sample, as C No. 4, "Creta Präparata," made from the precipitated carbonate, is shown. You will note its friability.

It will thus be readily seen, that this industry has rapidly assumed much greater importance than that which it formerly held, requiring as it does heavy capital for its successful prosecution as a business in the purchasing of improved machinery and the employment of skilled labor.

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### HEEREN'S MILK-TESTER.

BY JOSEPH W. ENGLAND.

(Read at the Pharmaceutical Meeting, January 19th.)

As a possible successor to the lactometer for the valuation of milk densities, I would show for your inspection one of "Heeren's Milk-Testers," manufactured by the Hanover Vulcanite Co., of Hanover, Germany. There is only one agency of the manufacturers, I believe, in this country, and that is located at Baltimore.

The directions for use accompanying the "tester" are as follows: "Place some drops of the milk (not boiled) to be tested on the middle of the black plate, and then lay the glass plate, with its colored side turned downward on the milk, so that the transparent part of the glass plate rests on it. The milk thus pressed together will assume a different shade of color, which will correspond, or nearly so, with one of the various shades on the glass plate, and the quality of the milk will be indicated by the scale on the edge of the plate."

Now, the principle upon which this "tester" seems to rest is apparently dependent upon the action of the light rays in traversing through the flattened sample of the milk upon the central disk of vulcanite, which encounter a resistance in their passage through the film of liquid proportionate to its opacity, so that when a relatively thick liquid like "cream" is taken for inspection, the light rays are almost wholly intercepted in their passage, and the color afforded by the test is almost white.

Then, reversely, "very poor milk" affords almost black color, or rather, a deep bluish-black, from the relative ease with which the light rays penetrate to the black disk; the intermediate grades, which vary between "cream" as the highest, and "very poor milk" as the lowest, being known as "very fat milk," "normal," "less fat," and

"poor," according as they are light slate, slate, light blue, and blue in color.

For the purpose of ready comparison, the series of the six colors, with the names of each grade attached, are arranged, concentrically, around the central, transparent circle of the glass disk of the glass plate, and any variation in color from the standard is thereby quickly detected.

Whilst the results of this method would not probably be received as evidence in law, yet in ordinary practice, for the approximate estimation of the comparative value of milk and the ready ascertainment it would give of the presence of added water, it stands among the very best of the instruments in present use, and is deserving of more general employment.

### M A U R Y ' S   O I N T M E N T .

BY JOSEPH W ENGLAND, PH.G.

(Read at the Pharmaceutical Meeting, January 19th.)

Under this name, an unctuous solid was first formulated and introduced into the Philadelphia Hospital, some eight years ago, by Dr. Maury, then a visiting physician of that institution, for the external healing treatment of sores, ulcers, etc., in general, and as especially serviceable in external affections of the skin, dependent upon venereal origin. Since that time, in the medical practice of the Hospital referred to, it has been constantly employed by the resident physicians, with a more than ordinary uniform success.

Thinking the subject might be a matter of general pharmaceutical interest, I present the formula for its preparation, as there practiced, and submit, at the same time, for your personal inspection, a sample of the ointment made yesterday. It may be added that the original formula contained simple cerate (Ceratum, U. S. P.) as the diluent, and not cosmoline, as hereafter mentioned :

B

Nitrate of mercury ointment, 3*i.*

Powdered rhubarb,

Powdered opium, aa, 3*ss.*

Cosmoline q. s. ad 3*i.*

Triturate the rhubarb and opium together with the cosmoline, until a perfectly smooth, homogeneous product is obtained. Then admix

with it the citrine ointment, after having previously rubbed the same with about one fluid drachm of glycerin to remove any granulation present, using in the latter action a bone spatula to work with.

The ointment, when freshly made with cosmoline as the diluent, is a soft, unctuous, greenish-brown solid, readily melting at the temperature of the body and capable of being absorbed by the skin. It changes rapidly, on exposure to air, to a very deep brown color. The partial change of chemical nature, as evidenced by the change of color, does not appear to affect the medical qualities of the article in question, as every-day usage has fully demonstrated that the old ointment was as efficacious as the new.

Its mode of application is somewhat peculiar and worthy of especial mention. The part to which the ointment is to be applied must first be poulticed with a hot "Labarraque poultice," that is, a poultice of flaxseed meal, made with hot "Labarraque's solution" (Liquor sodae chloratae, U. S. P.), instead of the hot water ordinarily used. After remaining on for awhile, the poultice is removed and frequently takes with it portions of dead tissue. The skin is then carefully dried, the ointment spread upon soft lint and applied twice a day, or varying according to the severity of the case until the sore, etc., is healed.

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## PHARMACEUTICAL NOTES.

### ABSTRACTS FROM THESES.

*Vinum Ipecacuanhae*.—Leopold Peters, Ph. G., has examined specimens of wine of ipecac, purchased at 49 different stores, with the object of ascertaining the alcoholic strength of the preparation. The Pharmacopoeia directs the menstruum to contain not less than 20 per cent. by weight of absolute alcohol. The process followed was evaporation of the alcohol and calculating the strength from the difference in specific gravity, as directed by the Pharmacopoeia. The results are placed in four groups, namely about 1·06 per cent. of alcohol in 9 specimens; about 3·71 per cent. in 16 specimens; 6·57 per cent. in 14 specimens, and 13·15 per cent. in 10 specimens. An alcoholic strength of between 12 and 15 per cent. by weight is considered to be sufficient for the preservation of this preparation.

*Tinctura Avenae sativæ*.—Henry E. Heinitsh, Ph. G., has prepared the tincture from oats with the husks, from the husks alone, and from

the grain deprived of the husks. 4 troy ounces of the ground material were macerated and displaced with diluted alcohol,  $5\frac{1}{2}$  fluid ounces of the percolate were reserved, the remainder evaporated to an extract and this was dissolved in the reserved portion, sufficient diluted alcohol being added to obtain 6 fluid ounces. The first two tinctures yielded 3 per cent. of extract, while  $3\frac{1}{2}$  per cent. were obtained from the tincture of the grain.

*Pharmacopœial Syrups.*—J. Lewis Nebinger, Ph. G., after experimenting with a number of syrups, suggests the following modifications of the officinal formulas.

*Syrupus Acaciae.*—The process of 1870 is far superior to the present one. The syrup should be made of select pieces of gum and in small quantities, and should be kept in a cool place.

*Syrupus Ferri Iodidi.*—Using the quantities directed by the Pharmacopœia, a syrup is first made of 300 parts of sugar and 150 parts of water, and transferred into a tared vessel. The solution of ferrous iodide is made with 150 parts of water and filtered into the syrup, followed by 25 parts of distilled water previously used for rinsing the flask in which the iron solution had been made. After the addition of 300 parts of sugar, solution is effected with the aid of heat, and enough distilled water is added to make 1,000 parts.

*Syrupus Ipecacuanhæ.*—Dilute 20 parts of fluid extract of ipecac with 133 parts of water, set aside for three days, filter and in the filtrate dissolve 247 parts of sugar without heat.

*Solubility of Quinine Pills.*—J. W. Pancoast, Ph. G., made a number of experiments to determine the conditions favoring the solution of quinine pills. Immersed in water at ordinary temperature for two days and without being agitated, compressed pills and sugar-coated pills seemed to be little altered; uncoated pills (formula and hardness not indicated) separated into a few fragments without dissolving, and gelatin coated pills became very soft. But when the pills were digested, with occasional agitation, in warm water or in acidulated water, or in a liquid imitating saliva, they were all dissolved, the time varying between thirty minutes and a few hours.

*Pills of Potassium Permanganate.*—Wm. M. Lewis, Ph. G., regards pipe clay as the most suitable excipient; but Sam. F. Stoll, Ph. G., believes cacao butter to be superior to all other excipients, which have been recommended for this salt. In preparing the pills a warm mortar is used in which the salt is powdered and, for every two grains of

it, incorporated with one-half a grain of cacao butter. The pills are very small.

*Suppositories of Quinine*, made with quinine sulphate, have sometimes produced irritation, which J. Addison Eberly, Ph. G., believes to be due to faulty manipulation. This is entirely avoided by triturating the salt with a small quantity of water until a perfectly smooth paste is obtained, then rubbing well with the cacao butter and moulding in the manner directed by the Pharmacopeia. Bisulphate of quinine does not yield satisfactory suppositories by dissolving the salt in a small quantity of water; they are best prepared by rubbing the crystals with a little olive oil to a smooth pasty mass, incorporating this with the cacao butter and moulding.

*Suppositories of Carbolic Acid* will be free from small globules of phenol and destitute of caustic properties, if the carbolic acid is dissolved in a portion of the cacao butter with the aid of heat.

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## GLEANINGS IN MATERIA MEDICA.

BY THE EDITOR.

*Cocaine and Homologues*.—The synthesis of cocaine was accomplished by Scraup (*Monatsh. d. Chem.*, 1885, 561), by heating in a sealed tube benzoyl-egonine, sodium methylate and methyl iodide; but the yield was only about 4 per cent.. W. Merck (*Ber. D. Ch. Ges.*, 1885, 2264), obtained about 80 per cent. of the theoretical quantity by heating in a sealed tube a mixture of benzoyl-egonine, methyl iodide and a little methylic alcohol to 100° C., when hydroiodate of cocaine was produced. An attempt to effect the synthesis more directly (*Ibid.*, p. 2953), by heating anhydrous egonine with benzoic anhydride and methyl iodide was successful, but the yield was very small. By following the preceding process but using ethyl iodide, Merck obtained a new base for which the name *cocethyline* is proposed. It has the composition  $C_{18}H_{23}NO_4$ , and crystallizes from ether in colorless radiating prisms, and from alcohol in glossy prisms, which melt at 108°–109° C. The yellow precipitate with platinic chloride crystallizes from much hot water in the presence of some alcohol in splendid shining yellow rhombic scales. Auric chloride gives a yellow voluminous precipitate, and mercuric chloride a white pulverulent one, soluble in hot water. The alkaloid is sparingly soluble in alkalies and alkali carbonates. Prof. Falck has ascertained that cocaine

thyline has an anaesthetic action similar to cocaine. The author intends to investigate other homologous alkaloids.

*Poisoning by Bryonia*.—Dr. C. Dickson reports (*Austral. Med. Gaz.*), a case of poisoning by the homeopathic tincture, which is made from the expressed juice of bryonia root, mixed with an equal bulk of alcohol. 80 minims were taken, producing symptoms resembling those from excessive doses of veratrum. The treatment consisted in giving stimulants like ammonia, coffee, and amyl nitrite, and in applying heat to the extremities.

*Myristica surinamensis, Roland*.—C. L. Reimer and W. Will (*Ber. D. Ch. Ges.*, 1885, p. 2011), describes the fruit (seed?) as being of the size and shape of a cherry, and invested with a dark-gray ribbed and very fragile shell, enclosing a light brown hard kernel which is internally marbled white and brown; odor faint, aromatic; taste peculiar, somewhat resembling that of cocoanut oil. The shells weigh about 16 per cent., and the kernels yield with hot ether 73 per cent. of fat which is light brown-yellow, hard, crystalline, melts at 45° C., possesses a slight not disagreeable odor, and is readily soluble in ether, benzol and chloroform, but only partially so in petroleum benzin and hot alcohol, the latter solvents leaving 6·6 per cent. of a yellowish translucent caoutchouc-like substance. The fat now contains about 6·5 per cent. of free acid. It gives with strong sulphuric acid a fuchsin-colored solution which gradually becomes colorless with the separation of brown flocks. The pure fat consists almost entirely of myristin and the free acid of myristic acid.

*Myristica Bicuhyba, Schott*.—The seeds have a black fragile testa with broad furrows, and a kernel resembling nutmegs in form, structure and size, and having an agreeable cacao-like odor, and a taste resembling that of butter of cacao, somewhat suet-like and with a bitter after-taste. The kernel is readily scratched with the finger-nail, and by trituration in a mortar is easily converted into a soft mass. H. Noedlinger (*Ber. D. Ch. Ges.*, 1885, 2617), determined the seeds to contain water 6 per cent., and fat 59·6 per cent.; the shells constitute 15·5 per cent. of the weight and contain 11·2 water and 2 fat, while the dried kernels contain 73.7 fat. The crushed seeds subjected to hydraulic pressure yielded 47·56 per cent. of fat, and the press cake contained 8·86 water, 4·50 ash, 17·74 fat, 30·62 tissue, 17·62 protein and 20·66 non-nitrogenous extractive. The fat extracted by ether is light yellow, and its ethereal solution yields shining white

sealy crystals and a yellow oily mother-liquor. The expressed fat is yellowish-brown and the surface becomes covered with a white crystalline efflorescence; fused it is dark-brown and congeals with a wavy surface. The fat melts at 42.5° to 43° C. and congeals at 32° to 32.5° C. It is readily soluble in hot ether, petroleum benzin, carbon bisulphide and chloroform, and partly soluble in hot alcohol. The fat remaining in the press cake has a slightly higher melting and congealing point. The brown fat of the shells melts at 43° to 44° C. All these fats give with concentrated sulphuric acid a beautiful fuchsin-red color. The shells contain also a wax-like body melting at 74° to 75° C., and very sparingly soluble in hot ether.

Analysis showed the fat to consist of the glycerides of myristic and oleic acids, the former predominating; together with small quantities of resins, free myristic acid, little volatile oil (the stearopten is not identical with myristic acid), about 0.1 per cent. of non-saponifiable oil, and a brown coloring matter.

*Peganum Harmala, Lin.*—The alkaloid *harmaline*,  $C_{13}H_{14}N_2O$ , was isolated from the seeds by Goebel in 1837, and subsequently (1847) investigated by Fritzsche, who also discovered a second alkaloid *harmine*,  $C_{13}H_{12}N_2O$ . With the view of ascertaining their chemical constitution the two alkaloids have been farther studied by O. Fischer and E. Taeuber (*Ber. D. Chem. Ges.*, 1885, p. 400–406). *Harmaline* crystallizes from wood spirit in yellowish scales, melting with decomposition at 238° C., yielding colored strongly fluorescent salts, and on being warmed with strong sulphuric acid, giving a solution of *harmalin-sulphonic acid* which after dilution with water exhibits a beautiful sky-blue fluorescence. Treated with fuming hydrochloric acid under pressure, crystalline *harmalol* is obtained, which is orange-red or brick-red, somewhat soluble in water, and in this solution shows a magnificent green fluorescence; it is probably identical with the yellow coloring matter contained in the seeds. By the oxidation of *harmaline* with nitric acid, *harmine* is formed, but the latter could not be converted into the former by reducing agents. *Harmine* crystallizes in colorless needles, melts with partial decomposition at 256° C., and is partly sublimable; its colorless salts show in diluted solution indigo-blue fluorescence. Treatment with fuming hydrochloric acid converts it into a phenol, *harmol*, which in acid solution has a violet fluorescence. By oxidation with chromic acid *harminic acid*  $C_{10}H_8N_2O_4$  is obtained in silky needles.

*Pipitzahoic acid* (see *Amer. Jour. Phar.*, 1884, pp. 185, 193), according to F. Mylius (*Annalen*, xcv, p. 188, and *Ber. D. Chem. Ges.*, 1885, p. 936), is not a true acid, but a hydroquinone containing the group  $C_9H_{17}$ , and should be called *perezone*. Its compound with aniline, *anilidoperezone*, crystallizes from hot alcohol in blue needles, melts at  $138^{\circ} C.$ , is insoluble in water, sparingly soluble in alcohol and in alkalies, but freely soluble in carbon disulphide, petroleum benzin, benzol, ether, chloroform and glacial acetic acid; the solution in strong sulphuric acid is dark-blue and on heating becomes cherry-red and yellow. By heating this compound with dilute sulphuric acid *hydroxyperezone*,  $C_{15}H_{20}O_4$ , is obtained, which crystallizes in glossy reddish-yellow scales, is freely soluble in alcohol, chloroform, benzol and glacial acetic acid, is a feeble acid, and dissolves in strong sulphuric acid with a cherry-red color, changing to yellow on heating, with the formation of *perezinone*,  $C_{15}H_{18}O_3$ .

A number of other derivatives were prepared by the author, also by R. Anschütz and W. Leather (*Ber. D. Chem. Ges.*, 1885, 715). Anschütz (*Ibid.*, p. 709), agrees with Mylius in regarding the natural product as a hydroquinone. The melting points of the acid and derivatives were lower than those ascertained by Mylius. The aniline-derivative is sublimable in steel-blue needles.

*El Bethina*, a *Datura* of the *Sahara*, is described by Mr. Bousson, pharmacien-major (*Arch. Méd. et Phar. Mil.*), who reports a number of cases of poisoning by the leaves. Complete prostration is produced, which after a long sleep may pass off without leaving any serious effects. Larger doses produce delirium with great thirst and ultimately death. The Arabs use as an antidote a mixture of dates triturated with water, and a sauce containing a considerable quantity of pepper (felfel) and butter. The remedy, taken freely by the patient, produces much sweating, and after twelve hours the patient is out of danger, without having experienced any hallucinations.

*Fabiana imbricata*, *Ruiz et Pavon*; nat. ord. Solanaceæ, is a Chilian shrub, about 15 feet high, with numerous branches, small imbricate leaves and purplish-colored flowers. In its native country it is known as *pichi*, and has been employed for a long time in various diseases of the urinary organs and also in certain diseases of the sheep and goat. Dr. A. Rodriguez (*Diario Med. Farmac.*) has recently called attention to this plant as being valuable in catarrh of the bladder from lithiasis, in certain liver affections and in dropsy. Its strong odor

is due to a volatile oil, and it is said to contain also considerable resin and a fluorescent principle crystallizing in needles and resembling aesculin. Filhol (*Compt. rend.*, l.), determined the presence of crocin in *Fabiana indica*.

*Asparagin in Hops.*—Bungener and Fries have shown that hop contains about 1 per cent. of asparagin, the nitrogen of which is equal to 30 per cent. of the total nitrogen in hops.—*Chem. Ztg.*, 1885, No. 86; *Zeitsch. Brauw.*, No. 13.

*Danais fragrans*, *Commerson*; nat. ord. Rubiaceæ. The root of this plant, which is a climbing shrub of Madagascar, is in great repute there as a vulnerary and antiherpetic, and is employed also as a tonic and antiperiodic. Heckel and Schlagdenhauffen have recently examined it (*Compt. rend.*, ci, p. 955), and showed that Bourdon's supposed alkaloid danaidine is calcium sulphate; but they isolated a greenish-brown glucoside *danain*, which is soluble in alcohol, acetone and hot water, and less freely soluble in chloroform, ether and cold water. It dyes fabrics, is precipitated by lead acetates and seems to represent the medicinal properties of the root.

*Test for olive oil.*—Audouynaud recommends (*Rép. de Phar.*, 1885, p. 498), agitating 2 c.c. of the oil with 0.1 gm. of powdered potassium bichromate; after a few minutes sufficient nitroso-sulphuric acid to make 4 c.c. is added and the brown-red mixture agitated; on the addition of 1 c.c. of ether pure olive oil rises to the surface with a green color. In the presence of 5 per cent. or more of the oils of sesame, ground-nut, cotton seed or poppy seed, the color of the oily layer varies from yellowish-green to yellow or reddish-yellow; the addition of water makes the color more apparent.

*Coloring Matter of Cochineal.*—W. Will and H. Leymann (*Ber. D. Chem. Ges.*, 1885, p. 3180–3193), obtained from 5 kilos of silver-gray cochineal between 400 and 500 gm. of pure carmine-red. Dissolved in 50 per cent. acetic acid and boiled with excess of bromine, colorless needles of  $C_{10}H_4Br_4O_3$ , are obtained, which are insoluble in water, readily soluble in alkalies, and sparingly soluble in hot alcohol, benzol or glacial acetic acid. The acetic mother-liquor yields with water yellow amorphous floccules, readily soluble in alcohol, benzol and ether, and yielding, on boiling with concentrated potassa solution, a red pulverulent salt, the acid of which, when liberated, crystallized in yellow glossy needles, having the composition  $C_{11}H_5Br_3O_4$ , and which has no tinctorial properties; but all its salts are strongly colored.

On treating the alkali solution with stannous chloride, and then supersaturating with hydrochloric acid, ether will extract a substance, the solution of which on exposure to the air, acquires a color similar to that of a cochineal solution, and like the latter becoming violet-red on the addition of alkali.

*Lanolin* is a cholesterin fat which may be obtained from keratin-holding tissues, such as sheep's wool, hair, feathers, skin and hoofs of horses. Dr. Oscar Liebreich (*Berl. Klin. Wochenschr.*, 1885, No. 47), recommends it as a base for ointments superior to glycerin-fats and paraffins, since it is capable of taking up its bulk of water, is with difficulty decomposed and is very readily absorbed. Its presence is easily ascertained by Liebemann's test, the solution in acetic anhydride acquiring on the addition of concentrated sulphuric acid, a rose color changing rapidly to deep blue and green. A 5 per cent. carbolic acid ointment made with lanolin, produced in one or two minutes a feeling of numbness without irritation, and an ointment containing  $\frac{1}{1000}$  corrosive sublimate will give the characteristic metallic taste a few minutes after inunction. The proper consistence of the ointments is best preserved by the addition of 5 or 10 per cent. of fat or of glycerin.

*American Petroleum*, according to C. Engler, contains a little over 0·2 per cent. of *pseudo-cumol* and *mesitylene*. The two hydrocarbons are also present in Caucasian petroleum, and it is very probable that cumols and other homologues of benzol are present in all rock oils.—*Ber. D. Chem. Ges.*, 1885, p. 2234.

*Aseptol*, according to a report by Mr. Anneessens, is freely soluble in water, glycerin and alcohol, is far less caustic than phenol, and in its disinfectant and antiputrescent properties is superior to salicylic acid or phenol; it deserves therefore to be preferred to the latter as a prophylactic and disinfectant. (See also *Amer. Jour. Phar.*, 1884, p. 647).

*Formic acid* is recommended by Dr. Schulz (*D. Med. Wochenschr.*) as a valuable antiseptic, which in very weak solutions effectually prevents the decomposition of organic substances.

*Roasted Coffee* is highly recommended by Dr. Oppler (*Nouv. Rem.*) as an antiseptic dressing for wounds, for destroying the odor of twice, or even four or five times its weight of iodoform, and for disguising the taste of castor oil. These valuable effects are attributed to the charcoal and the aromatic decomposition products, formed during the roasting of coffee.

*Naphthalin* is a good antiseptic, and when applied to ulcers causes the rapid disappearance of any offensive odor. Being non-irritant, its application is painless; moreover, it induces rapid healing and cicatrization of the ulcers.—*L'Union Méd.*, Dec. 12, 1885.

*Hydronaphthol*, a derivative of naphthalin, according to Dr. G. R. Fowler, is a more efficacious antiseptic than carbolic acid. It crystallizes in silvery white or grayish laminæ, has a slight aromatic odor and taste, is not irritating or poisonous, does not volatilize at ordinary temperature, but sublimes at about 90° C., is soluble in about 1,000 parts of water and dissolves freely in alcohol, ether, chloroform, glycerin, benzol and fixed oils. Its compounds with alkalies and alkaline earths are readily decomposed by carbonic acid. The saturated aqueous solution will perfectly preserve for an indefinite time animal tissues and fluids; when volatilized for purposes of fumigation the vapor of hydronaphthol has no obnoxious effect upon the organs of respiration, nor will it injure textile fabrics. The powder mixed with 50 times its weight of magnesium carbonate, fuller's earth or kaolin may be dusted on wounds and drainage tubes; and absorbent gauze, cotton, jute, wood flour, sawdust, etc., may be impregnated with it by means of the alcoholic or benzol solution. The 10 per cent. alcoholic solution perfectly sterilizes, and sufficiently hardens and preserves catgut.—*N. Y. Med. Jour.*, Oct. 3, 1885.

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**Essence of Lemon.**—By G. BOUCHARDAT and J. LAFONT (*Compt. rend.*, ci, 383-385).—The authors have carefully fractionated essence of lemon and examined the products obtained by the action of dry hydrogen chloride on the different fractions. In most cases distillation was conducted under reduced pressure. The results lead to the conclusion that essence of lemon is a highly complex substance consisting mainly of hydrocarbons of the composition  $C_{10}H_{16}$ , and a little cymene. The most abundant of the  $C_{10}H_{16}$  hydrocarbons is a citrene, which boils at about 178°, has a rotary power higher than + 105°, and yields directly a solid inactive dihydrochloride. The essence also contains small quantities of several terebenthenes, which begin to boil below 162°, and yield monohydrochlorides differing from one another in their rotatory powers.—*Jour. Chem. Soc.*, 1885.

## ANALYSIS OF SAM-SHU, A CHINESE LIQUOR.

BY CHARLES E. MUNSELL, PH.D.

The liquor known as *toddy*, *arrack*, *saki*, *tsin*, and by other names in Eastern Asia, is distilled from the yeasty liquor in which boiled rice has fermented for many days under pressure. Only one distillation is made for common liquor, but when greater strength is desired two or three distillations are made; and it is this strong spirit alone which is rightly called *Sam-shu*, a word meaning "thrice fired." (The Middle Kingdom : S. Wells Williams. New York, 1883. Vol. I, p. 808.)

This liquid, which has the color of rich sherry wine, is imported in large quantities and is sold here (New York City) in the shops of Mott and Pell streets to Chinamen, who are very fond of it, not only for drinking but for preparing their opium for smoking. It is not agreeable to the taste of Caucasians, as it tastes and smells like spoiled Jamaica rum. Hitherto the proprietors of the Chinese shops, where it is retailed, have refused to take out licenses, because they did not consider the liquid intoxicating; in consequence of this refusal a sample was sent to the Health Department by the Excise Commissioners, with a request for its analysis. The results of this analysis are as follows :

Specific Gravity at 18° C.....	94·84
Percentage of Alcohol, by weight.....	33·81
" " " volume.....	45·70
" " Saccharose.....	5·39
" " Glucose.....	1·19
" " Mineral constituents.....	.06
" " other Organic Solids.....	2·80
" " Total Solids.....	9·44
==	

Dr. J. P. Battershall, of the United States Laboratory, Port of New York, obtained the following percentages of Absolute Alcohol in samples of this "Chinese Medicine":

	Volume.	Weight.
No. 1.....	44·50	37·50
No. 2.....	33·1C	27·27
No. 3.....	52·0C	44·42

These analyses show that *Sam-shu* contains as much alcohol as any liquor usually sold.—*Jour. Am. Chem. Soc.*, 1885, p. 243.

## THE ALBUMINOÏDS OF MILK.

BY A. DOGIEL.

1. *Peptones*.—As a result of his investigation of cow's milk, Schmidt-Mülheim states that it contains peptones, the proportion varying from 0·08 to 0·19 per cent. of the milk (*Pflüger's Archiv*, 28, 287). Hofmeister, on the other hand, denies that they are present, and in human milk likewise (*Zeits. physiol. Chem.*, 2, 288). In further investigating this question, the author sought first to ascertain the probable error inherent in the method of isolating the peptones. For this purpose known quantities of peptones were added, and the milk was then treated with ferric chloride solution in the usual way for the separation of other proteïds; the peptones were estimated in the filtrate by means of a comparative colorimetric determination based on the biuret reaction. In 19 experiments in which 40 c.c. of milk were taken for each, the quantities of peptones added varied from 0·004 to 0·020 gram, and the solutions finally obtained, after precipitation and washing, amounted to 190—250 c.c. The ultimate result was to show that the quantity of peptone retained by the precipitate was independent of the amount added, the quantity lost being approximately 0·005 in each experiment, that is, 0·0023 for every 100 c.c. solution ultimately obtained. That the peptone is retained by the precipitate is proved, according to the author, by the diminished loss which is noted when the iron oxide precipitate is boiled with water, and this aqueous extract added to the solution. By varying the quantity of milk, it was found that the loss of peptone remained equally uninfluenced.

On the basis of the experience of these blank experiments, the author proceeded to the examination of normal specimens of cow's and woman's milk, adopting special precautions in the isolation by precipitation of the peptones presumed to be present. In all cases, however, negative results were obtained. Having further repeated Schmidt-Mülheim's experiments (*loc. cit.*), and found that the substance supposed by him to be a peptone is a residue merely of one of the normal proteïds of milk, the author finally concludes that these milks do not contain peptones.

2. *Caseins*.—The author has isolated, with special precautions, the caseins from woman's and from cow's milk for the purpose of instituting a comparison of their properties. Having found that their reac-

tions were substantially identical, he examined the products of their artificial (peptic) digestion, which proved to be identical also, and there can be no doubt therefore that they are, chemically, very closely related.

3. *Other Proteids.*—In a comparative examination of the products of peptic digestion of the two milks, by the optical method, the author found the rotation to be 50 per cent. greater in the case of the products from woman's milk, whence he concludes that in regard to the proteids, not peptones, the two milks are differently composed. He suggests that the difference may be chiefly in respect of the lactoalbuminoïd recently described by Sebelien (*ibid.*, 9, 403).—*Jour. Chem. Soc.*, 1885, p. 1149; *Zeits. physiol. Chem.*, IX., 591.

### SPURIOUS CUBEBS.

BY WILLIAM ELBORNE,

*Assistant Lecturer on Materia Medica and Pharmacy, Owens College, and*

H. WILSON.

(Read before the British Pharmaceutical Conference.)

In a paper<sup>1</sup> recently published in the *Pharmaceutical Journal* on this subject, Mr. E. M. Holmes has drawn attention to the recent adulteration of cubebs with an obnoxious piperaceous fruit referred by Mr. W. Kirkby<sup>2</sup> to *Piper crassipes*?, and the lauraceous berries of *Daphnidium Cubeba*.<sup>3</sup>

The following are the leading characteristics of these fruits as compared with the genuine drug.

*Piper crassipes?*

Slightly larger, of a lighter color, the persistent stalk more flattened. Taste bitter, odor resembling mace. Microscopically it differs in having ten rows of cells in the endocarp instead of four.<sup>4</sup>

*Daphnidium Cubeba.*

Same size as cubebs. Stalk articulated, usually absent. Contains no starch. Taste, faintly like oil of lemon—afterwards bitter.

In the same paper Mr. Holmes has also given good practical tests whereby these adulterants may be readily detected in cubebs occurring in the form of powder, founded upon the blue coloration yielded by

<sup>1</sup> *Phar. Jour.*, [3], xv, p. 909; *Am. Jour. Phar.*, 1885, 302.

<sup>2</sup> *Phar. Jour.*, [3], xv, p. 653; *Am. Jour. Phar.*, 1885, 353.

<sup>3</sup> Figured in Hanbury's "Science Papers," p. 247.

<sup>4</sup> Kirkby, *loc. cit.*

the decoctions upon treatment with iodine, due to the presence of starch, and the color reactions afforded by the respective powders upon treatment with strong sulphuric acid.<sup>5</sup>

With the limited time at our command, the object of the authors has been to carry the subject a stage further by more closely examining the character of the obnoxious adulterant to which may evidently be attributed the ill effects described by Dr. Buxton Shillitoe,<sup>6</sup> viz, the fruits of *Piper crassipes*?

I. Two grams of the powder upon incineration yielded a residue of '175 gm., corresponding to 8·75 per cent. of ash.

II. Ten grams of the powder were macerated in 100 c.c. of petroleum ether for five days. Five c.c. poured off and evaporated in a current of air free from moisture,<sup>7</sup> left an oleo-resinous residue weighing '077 gm.

III. Five grams of the powder were mixed with water, distilled, and the distillate shaken with petroleum ether; the ethereal solution decanted and evaporated in a current of dry air yielded a residue of '56 gm., corresponding to 11·5 per cent. of volatile oil, which possessed an agreeable odor resembling a mixture of turpentine, oil of lavender and oil of peppermint.

IV. The washed and dried marc from II. was macerated for five days in ether. Ten c.c. of the ethereal solution upon evaporation to dryness yielded a residue of '05 gm., corresponding together with the resin extracted in II. to 8·5 per cent.

This residue was soluble in absolute alcohol, and other portions boiled with a small quantity of distilled water, yielded a solution which copiously reduced Fehling's solution, and was not affected by either ferric chloride or Mayer's solution; it possessed a very bitter taste resembling quassia, and a few drops treated with strong sulphuric acid upon a white tile yielded a brown color.

Thereupon three ethereal tinctures of the fruits of *Piper Cubeba*, *Piper crassipes* and *Daphnidium Cubeba* were prepared by macerating 20 gms. of the finely powdered drugs in 50 c.c. of ether respectively for forty-eight hours, and 10 c.c. of each exposed to a current of dry air for twenty-four hours at the ordinary temperature.

<sup>5</sup> For the color reactions afforded by the respective tinctures, see Mr. E. D. Gravill's paper (*Phar. Jour.*, [3], xv, p. 1005).

<sup>6</sup> *Lancet*, May 2, 1885, p. 829.

<sup>7</sup> Osse's method (*Year-book of Pharmacy*, 1876, p. 362).

The following remarks apply to the residue obtained :

Character of residue.	<i>Piper Cubeba.</i>	<i>Piper crassipes.</i>	<i>Daphnidium Cubeba.</i>
Oleo-resinous, dull yellow color.	Oleo-resinous, olive-green color.	Fatty, brown color.	
The filtered solution obtained after boiling the residue with 10 c.c. of water.	Colorless, free from bitterness; sparingly reduced Fehling's solution.	Colorless, very bitter, like quassia; copiously reduced Fehling's solution.	Colorless, very bitter; sparingly reduced Fehling's solution.
A few drops of the above solution treated with $H_2SO_4$ upon a white tile.	Developed a crimson color (characteristic of cubebin).	Developed a brown color.	No change.
Portion of original residue treated on a white tile with $H_2SO_4$ . With $H_2SO_4+HNO_3$ .	Crimson.	Brown.	Brown.
	Crimson, changing to violet.	Green, fading to yellow.	Brown.

V. The marc from IV. washed and dried was macerated in 100 c.c. absolute alcohol for five days. Five c.c. evaporated to dryness in a water-oven yielded a residue of .015 gm., corresponding to 3·0 per cent.

VI. The marc from V., washed and dried, was macerated in 100 c.c. of distilled water for five days. Ten c.c. evaporated to dryness as above yielded a residue of .16 gm., corresponding to 16 per cent.

Ten c.c. mixed with 20 c.c. absolute alcohol, set aside for twenty-four hours, the precipitate collected, washed and dried, weighed .1 gm., corresponding to 10 per cent. mucilaginous matters.

From the above experiments the spurious cubebs under investigation are free from tannin, and contain essential oil, resin, and a very bitter glucoside, but to which of the two latter the deleterious effects already recorded may be attributed remains a subject for physiological experiment. In conclusion, the authors are of opinion that this species agrees entirely with that described by Flückiger and Hanbury,<sup>8</sup> and may be definitely referred to *Piper crassipes*.—*Phar. Jour. and Trans.*, Dec. 12, 1885.

**Compound Fluid Extract of Buchu.**—The following formula which has been used by Dr. H. H. Stinson, for ten years, with excellent results, is recommended: Buchu 16 troy ounces, uva ursi, cubeb and juniper berries, of each 4 troy ounces; prepare in the usual manner 28 fluid ounces of fluid extract, using 95 per cent. alcohol for the menstruum.—*N. E. Med. Monthly*, December, 1885, p. 27.

<sup>8</sup> *Pharmacographia*, p. 588.

## CAMPHOR OIL.

It will be remembered that Mr. MacEwan, in a paper printed in *Phar. Jour. and Trans.*, June 20, 1885, and in *Am. Jour. Phar.*, 1885, p. 406, stated that Japanese camphor oil does not contain camphor, a conclusion which he arrived at by freezing a sample of the oil and distilling at a high temperature, whereby he failed to obtain any separation of camphor. Mr. Moss, on the other hand, showed, in a paper read at the Aberdeen Conference, that though the ordinary oil varies considerably, many cases of it contain separated camphor when received here in the winter months, though not in summer, and that a considerable quantity of camphor is obtained by distilling below 407° F. (208° C.). In the discussion which followed Mr. Moss's paper the wish was expressed for a further and more complete research. This wish is in a great measure met by the researches of Mr. Kikorokuro Yoshida, the results of which are recorded in a communication from the Chemical Society of Tokio (*Jour. Chem. Soc.*, October, 1885. p. 779). The specimens examined by Mr. Yoshida were an oil five years old and one more recent but of uncertain age; both deposited some camphor on freezing, the older more abundantly than the other. It is not stated whether these specimens were separately examined as to their chemical constituents, but the value of the facts brought out by the research is not diminished on this account, since it is already known that old samples of camphor oil contain more camphor than recent samples. By distilling the five years old oil into sixty-five fractions, Yoshida finally separated these into five portions:

1. Boiling below 145° C.....	0·2 per cent.
2. A hydrocarbon, b. p. 156°.....	7·0 "
3. " " b. p. 172°-173°.....	20·0 "
4. Camphor, b. p. 205°.....	22·8 "
5. An oxygenated oil. b. p. 212°-213°.....	50·0 "
	100·0

Fraction 1 was obtained in too small quantity for examination; it was an oily hydrocarbon. The second fraction, rectified over sodium, was found on examination to be *terebinthene* ( $C_{10}H_{16}$ ), identical chemically, but differing physically from that yielded by turpentine. It yielded a hydrochloride, dihydrochloride and the nitrochloride of Tilden and Shenstone. The specific gravity of the terebinthene at 15° C. was 0·8641, and rotatory power  $[a]_D - 76.1^\circ$ . The third fraction

is a terpene hydrocarbon of pleasant lemon odor ; it is probably identical with the citrene of lemon oil, and, like hesperidene of the orange, yields a camphor-like body ( $C_{10}H_{16}O$ ) when oxidized with chromic acid. It differs from lemon oil citrene in not yielding *terpin* on oxidation with nitric acid, and also in its rotatory power (-68.3°). Passing over the camphor, the author found in the fifth fraction a new body, the existence of which in the oil is directly connected with the formation of camphor. In the first instance this was the portion of oil boiling at 208-218° C., but finally it was reduced to a fraction boiling at 212-213° C., and would only be obtained pure by cooling to -30° C., in order to completely separate the camphor from it. On again distilling this pure product the author obtained 5.6 per cent. of camphor, and a second redistillation afforded 4.9 per cent. more. Returning to the examination of the camphor-free oil, he found that by boiling it for six hours much camphor was found, but that a temperature of 100° C. does not have this effect. Previously he had determined that the oil absorbed 8 per cent. by volume of oxygen in the course of a month, camphor being formed simultaneously. He, therefore, concludes that the formation of camphor by ageing of the oil or by boiling is due to the presence of this oxygenated oil. He names it, provisionally, *camphorogenol* [or camphor hydrate ( $C_{10}H_{16}O$ ,  $H_2O$ )]. It is a colorless, heavy oil of specific gravity 0.9794 at 20° C., has a pleasant camphoraceous odor, milder, however, than that of camphor. It is soluble in alcohol, ether and bisulphide of carbon, but insoluble in water. Warmed with dilute nitric acid (1 to 20 of water) it yields a large quantity of camphor and a yellow oil, from which more camphor may be obtained by freezing. Boiling chromic acid mixture has a similar effect. Benzoic acid and glacial acetic acid failed to act upon the body, thus proving its non-alcoholic nature ; but strong nitric acid acts upon it, camphoric acid and cymene being amongst the products. By acting on the alcoholic solution of camphorogenol with sodium, *camphol* (borneol) is produced. The body, therefore, forms a connecting link between camphor and camphol. The author obtained 7 per cent. of camphor from an artificial camphor oil composed of 55 of camphorogenol, 30 of citrene and 17 of terebinthene, by heating it in presence of air for ten days on a water-bath, but failed to get any camphor from a mixture of citrene and terebinthene alone. Simultaneously with the production of camphor, a part of the camphorogenol is, in all cases, poly-

merized into a dark oil. Various details of great interest are contained in the paper, but these cannot here be produced in an intelligible way. To pharmacists the publication of Mr. Yoshida's results is at the present time peculiarly opportune, but this circumstance is of small value compared to the important effect which it will have upon the camphor industry. There are indications that the camphor forest are suffering to a degree not far short of devastation, and, as a tree is not fit for camphor-making until it is nearly two centuries old, it is necessary that the most should be made of present resources. We understand that very large stocks of camphor oil are held in this country, different samples varying greatly in their characteristics, as was pointed out by Mr. Moss. It is possible that the dark oils are nothing else than the residuum containing polymerized camphorogenol. The lighter oils, on the other hand, generally exhibit a preponderance of the lower boiling bodies. We understand that several pharmacists are engaged in the examination of commercial supplies; it is desirable that they should pursue their researches to the determination of what oils are useful and what are not, from a medicinal point of view, camphor and camphorogenol being taken as the basis of value. It is obvious, also, that oils which contain the maximum of terebinthene and citrene, will be best adapted for varnish making.—*Phar. Jour. and Trans.*, Nov. 21, 1885.

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## GLEANINGS FROM FOREIGN JOURNALS.

BY GEORGE H. OCHSE, PH.G.

*Lanolin*.—Under the name of Lanolin, Prof. Liebreich introduced the fat obtained from sheep-wool. One of its properties is to take up more than its own weight of water. Unna states that cooling ointments should contain large quantities of water. Dieterich, with a view of determining the quantity of water taken up by different salve bases, experimented with 21 different bases at a temperature of 15° C., taking for each experiment 100 parts of the base; his results were as follows: Cosmoline took up 4 parts of water, lard 15, benzoinated lard 17, and lanolin 105. The remaining bases were mixtures of either almond oil, olive oil, linseed oil, cod liver oil, or oleic acid with either lard, wax, resin, suet, or spermaceti. White wax took up more water than yellow wax, probably due to the acid it contains. A mixture of 70 parts of oleic acid and 30 parts of white

wax took up 60 parts of water, whilst a mixture of yellow wax and oleic acid in the same proportions took up but 50·5 parts of water.

Lanolin, as it now appears in the market, is a perfectly neutral base and hence is not apt to decompose any medicament which might be added. Lassar experimented with it on 400 patients, and states that lanolin is readily absorbed by the skin, does not produce any irritation and permeates the lower layers. Bachmann rubbed a 10 per cent. iodide of potassium ointment, made with lanolin, into the skin for five minutes; after a lapse of half or three-quarters of an hour, iodine was detected in the urine. The elimination of the iodide by the urine continued for 14 days after several applications of the ointment. Lanolin was used by the ancients, and is mentioned by Ovid, Herodot, Plinius and Aristophanes. Under the name of œsypum it is mentioned in the Florentine pharmacopœia of 1560.—*Rundschau*, No. 52, p. 825.

*Pure Cochineal Carmine* is not entirely soluble in alcohol and water; water dissolves it sparingly, alcohol considerably. Instead of containing only traces of alumina and lime as is usually supposed, Liebermann states that it contains as much as 8 per cent.—*Rundschau*, No. 52, p. 835.

*Hypnone*—a new hypnotic.—Methyl-phenyl-acetone (methyl-benzoyl or acetophenone) has been used by Dr. Dujardin-Beaumetz as a hypnotic. He proposes to name it hypnone. Hypnone belongs to the aromatic group, formula  $C_6H_5COCH_3$ , and was obtained by Friedel by distilling a mixture of benzoate and acetate of calcium, also by the action of benzoyl chloride on zinc methylate. Hypnone is a mobile, colorless liquid, very refractory, boils at  $198^{\circ} C.$ , volatile and has a persistent odor, recalling that of bitter almonds, or cherry-laurel water; it is not inflammable, but is an active supporter of combustion; at about  $4^{\circ}$  or  $5^{\circ} C.$  it becomes solid, forming large crystals. Its density is greater than water, 1 c.c. weighing about 1·6 gm. Hypnone is neutral to test-paper, very soluble in alcohol, ether, chloroform and benzin. It is very soluble in the oils, particularly expressed oil of almonds. When dropped from a bottle the drops are very small, 1 c.c. being equal to 39-40 drops. It is not affected by sulphuric or hydrochloric acid, nor by perchloride of iron; with nitric acid it produces a yellow coloration. Dose, 1 drop.

—*Archives de Pharmacie*, i, p. 1.

*Colorless Cement*.—12·5 parts of cut, unvulcanized caoutchouc are

dissolved in 10 parts of chloroform and 2.5 parts of mastic added, allowed to stand for several days and shaken occasionally.—*Pharmaceutische Zeitschrift fuer Russland*, 1885, p. 756.

*Cumol.*—By heating 1 part of aluminium chloride with five parts of diphenylpropane, Silva obtained cumol, a considerable quantity of benzol and a tarry substance. Cumol thus obtained boils at 158°-160° C. Silva believes it to be the normal propyl-benzol.—*Chemiker Zeitung*, ix. p. 1770.

*Preparation of Pure Oxalic Acid.*—The method usually adopted for preparing chemically pure oxalic acid (crystallization from hot solution of oxalic acid in dilute muriatic acid) is tedious and entails considerable loss. Soltsien obtains pure oxalic acid by sublimation. Care must be taken to deprive the acid of its water of crystallization at a temperature not exceeding 85° C.; while still warm it is placed in a porcelain evaporating dish and covered with filtering paper, over the paper is placed a cone of filtering paper and a glass funnel. It is then heated on a sand-bath at a temperature below 150° C. Sublimated oxalic acid is hygroscopic. To prepare a normal solution it is of course advisable to keep in a dessicator with sulphuric acid or to recrystallize.—*Chemisch-technischer Central Anzeiger*, iv. p. 139.

*Sulphate of Sparteine*—a new remedy in heart affections.—Sparteine is an alkaloid obtained from *Spartium scoparium*. It is an oily liquid, decidedly alkaline, insoluble in water. Sparteine forms with sulphuric acid a crystallizable salt, soluble in water. Germain-Sée experimented with an aqueous solution of sulphate of sparteine—10 centigram doses produce a remarkable effect on the heart without disturbing digestion or influencing the nervous system. Germain-Sée employed it in a number of cases, and cites as the result of his experiments in cardiac affections, three characteristic effects. The first, which is the most important, is the quickening and renewed action of the heart and pulse, in this respect resembling digitalis or lily of the valley, but its action is more prompt and more durable. The second is the regulation of the disturbed heart rhythm, no other medicine can be compared with it for this purpose. The third is the acceleration of the heart beat. All these effects appear in about one hour or several hours at the most, and are maintained three or four days after the medicament has been taken. During this time the general strength is increased and respiration is quite easy. When the pulse is irregular, intermittent and arhythmic, sulphate of sparteine quickly re-establishes

lishes the normal type. When the circulation is slower the medicament appears to immediately obviate the functional trouble, maintaining and augmenting the acquired force of the heart muscle.—*Bulletin Général de Thérapeutique*, December, 1885, p. 528.

## VARIETIES.

**FLUID EXTRACT OF SALIX NIGRA**, prepared from the inflorescence, is recommended by Dr. F. T. Paine, in drachm doses, for neuralgia and dysmenorrhœa of ovarian origin, in the treatment of masturbation.—*Med. Age*.

**BROMHYDRATE OF QUININE AND VALERIANATE OF CAFFEINE**, combined in the proportion of fifteen grains of the former to eight grains of the latter, are regarded by Dr. Martinez Cereceda as frequently effectual in malarial fevers, which do not yield to the sulphate of quinine in much larger doses. The bromhydrate of quinine has a gradual sedative action upon the nervous system, does not irritate the stomach, and its use is followed by no ill effects.—*Med. News*, 1885; *Gaceta de los Hosp.*

**HYPNONE**, a new hypnotic, is methylphenylacetone. It is the principal product, resulting from the dry distillation of calcium benzoate and acetate, and is formed also by the action of zinc methyl upon benzoyl chloride. It crystallizes in laminae, and melts at 14° C., or, according to others, at 20.5° C.; it is nearly insoluble in water, slightly soluble in glycerin, readily soluble in alcohol and ether. Dujardin-Beaumetz states that it should be used only in cases of over-excitement of the brain and not where there is pain. The dose is four to ten drops, taken at once, since divided doses are not effectual. Vigier (*Gaz. hebd.*) suggests an elixir, prepared in the following proportion: hypnone 1 drop, alcohol (60 per cent.), and syrup of peppermint, of each 3 grams.

**A MIXTURE OF ANIMAL CHARCOAL AND CHAMPHOR**, equal parts, is recommended by Barbocci as an application to prevent the offensive odor and remove the pain of old excavated ulcers.—*British Med. Jour.*

**CHLOROFORM AS A HEMOSTATIC** in minor surgical operations, especially in the mouth and throat, is recommended by Dr. Spaak; it is used in one per cent. aqueous solution.—*Wien Med. Blätter*, 1885, No. 41.

**ALKALINE TOOTHWASH**.—Vigier (*Gaz. hebd.*) recommends the following: Dissolve sodium bicarbonate 20 grams in distilled water 980, and add sufficient distilled spirit of peppermint. Triturate 20 drops of the best oil of peppermint with magnesium carbonat'e 2 grams, afterward with the above solution, gradually added, and filter.

**CAUTERIZING CRAYONS** are recommended by Moser (*L'Union Méd.*), to be prepared from charcoal 40, potassium nitrate 5, porphyrized iron 5, powdered benzoin 1, and sufficient mucilage. After drying, these crayons are firm, light easily and produce immediate cauterization.

Feb., 1886.

CASTOR OIL FOR REMOVING WARTS is recommended by Dr. S. C. Dumm (*Therap. Gaz.*, December, 1885); the application is made once a day, and must be continued for from two to four or six weeks.

OINTMENT OF MERCURIC SUBSULPHATE, as a local application in certain syphilitic affections, is directed by Mauriac to be prepared of Turpeth mineral 2 to 3 parts and lard 30 parts.—*Med. News*, Jan. 2, 1886.

Poisoning from CAFFEINE.—Dr. E. N. Liel, reports a case of poisoning from eighteen grains of citrate of caffeine, which was relieved by hypodermic injections of atropine and drachm doses of whisky.—*N. Y. Med. Jour.*

SILICA IN A URINARY SEDIMENT has been observed by Abonnell. The sediment was granular, the surface smooth, the angles rounded, and was hard enough to scratch porcelain; it consisted chiefly of silica, with small quantities of calcium oxalate and uric acid.—*Lyon Méd.*, June 21, 1885.

## MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, January 19th, 1886.

The meeting was called to order by the actuary, and Mr. Robert England was elected chairman.

The minutes of the last meeting were read, and, there being no corrections to make, they stand approved.

The actuary presented the following books for the library, viz.: The Report of the Tennessee State Board of Health for 1880-84; The Report of the Illinois Board of Pharmacy for 1885; Weights, Measures, and Specific Gravity, by Oscar Oldberg; and Volume III of the Publications of the Bureau of Ethnology, by J. W. Powell, director, issued by the Smithsonian Institution. These were all accepted and directed to be placed in the library, and the thanks of the College were returned for them.

Mr. J. W. England read a paper upon the manufacture of whiting (see page 77) which was referred to the publication committee.

A paper describing *Heeren's milk tester*, an instrument designed to determine the richness of milk; and a paper upon *Maury's ointment*, the formula not being generally accessible, were read and referred to the publication committee.

Messrs. Mellor & Rittenhouse presented to the cabinet, through Prof. Maisch, a specimen of Turkey *Licorice Root*, consisting of the upper portion of a very large main root of *Glycyrrhiza glandulifera*, which is now generally regarded as a variety of *Glyc. glabra*. Specimens of the fruit of the same plant were also presented. This variety is extensively cultivated in Asia Minor and Syria, and is the source of the Russian licorice-root of commerce, which was formerly supposed to be procured from *Glyc. echinata*.

Mr. G. W. Kennedy of Pottsville sent to the cabinet a specimen of coal which shows the colors of the rainbow so strongly that it may well be termed beautiful.

Mr. Lehr, of the present junior class, presented some specimens of petrifacts, from the Lykins Valley coal mines, bearing very distinct impressions of leaves, ferns, &c.

Prof. Sadtler gave a very interesting and instructive account of the manufacture of *Celuloid* illustrated by a large number of specimens of the crude material and of the finished products. This material was originally discovered by an Englishman named Parkes, in 1865, and by him named parkesine. His first experiments were made by treating pyroxylin with different solvents of a liquid character; among them mineral and wood naphthas and glacial acetic acid, to which camphor was added. In 1868 a medal was given him at the Paris Exposition, but as he failed to make it a commercial success, it dropped out of use. In 1870 the Brothers Hyatt, then of Albany, found that the solvent best adapted to the purpose was camphor heated to the melting point; when pyroxylin is comminuted and thoroughly mixed with the melted camphor it becomes a plastic, homogeneous solid, capable of being moulded into almost any form. The principal company, located at Newark, N. J., devote their energies to developing new uses for the crude material, while the finishing of different smaller articles is left for the companies licensed by the proprietors of the process. Among the different uses it has been applied to, the manufacture of keys for pianofortes and organs is a very extensive one; about 80 per cent. of the instruments being supplied with keys from this source, it being preferable to ivory as it retains its whiteness much longer. While in the plastic state celuloid may be colored and stratified so as to imitate agate, cornelian and other precious stones. It is capable of being drawn out into filaments, resembling wire, and of being rolled out into thin transparent sheets, and, as it is very light, it is preferable to vulcanite, for many purposes; in making plates for artificial teeth, the very small amount of cinnabar required to color it, removes the danger of the injurious mercurial effect which is complained of when vulcanite is used for that purpose. It has been applied to various kinds of fabrics, being preferable to oil cloth, as it is not liable to crack. As a surfacing for wood it is superior to varnish, not being affected by moisture. Its elasticity and toughness make it very serviceable for watch dials, billiard balls, combs and brush-stocks, while the finish, which the material is capable of receiving, renders it probable that its use will be extended constantly.

Mr. Bullock, the president of the College, sent to the meeting a *horn scoop*, which had been left in a box along with some worm-eaten coriander seeds; the insects having satiated themselves with the seeds, turned to the horn scoop, the surface and edges of which they had completely destroyed.

Some samples of *sandballs*, called by the quarrymen *bombshells*, because they explode under certain conditions, were exhibited and presented by Mr. Bullock.

Prof. Sadtler alluded to the new apparatus which had just been imported for the use of the College, and said that he had hoped to have it exhibited, but owing to the bad packing, it was somewhat injured and would require repairing before being used.

Mr. Procter inquired whether any of the members had found any *sugar* that was free from ultramarine. This elicited a statement from several members that, while much of the sugar of commerce was so doctored and in some instances so badly as to be productive of serious annoyance, yet sugar free from artificial coloring could be obtained.

There being no further business, a motion to adjourn was carried.

T. S. WIEGAND, *Registrar.*

## EDITORIAL DEPARTMENT.

*College Attendance.*—Of 289 students who are first matriculants at the Philadelphia College of Pharmacy, the following practical business experience was reported at the beginning of the lecture course :

Not over 3 months,	3	Not over 3 years,	58
" " 6 "	1	" " 3½ "	50
" " 9 "	3	" " 4 "	24
" " 12 "	3	" " 5 "	28
" " 15 "	10	" " 6 "	16
" " 18 "	4	" " 7 "	2
" " 21 "	13	" " 8 "	3
" " 2 years,	11	" " 10 "	1
" " 2½ "	58	" " 11 "	1

It will be observed that about 16 per cent. of the number had been engaged at the drug business for periods not exceeding two years, and of these only about 3 per cent. had an experience of one year or less. The average for the whole number is a little over three years, and over 57 per cent. of these matriculants had been in the drug business between two and three and a half years. It is evident from the above that only a very small number of the apprentices avail themselves of the theoretical instruction provided by the lectures in the early part of their pharmaceutical apprenticeship, a course which has been recommended and is followed by some of our best pharmacists. On the other hand, it will be noticed, on the perusal of the class-lists, that many students extend their studies over three years, in the place of two years, which are indispensable. Such a course deserves to be encouraged on the part of the employers; in fact, to a number of the young men an extension of their studies to four years would be quite profitable. It is too frequently the case that the importance of the junior course of studies is not appreciated as it should be, since it is preparatory to the senior course, for which a solid foundation must be laid. Many young men could most profitably spend two years in the former, and then, with ordinary but careful application, would the better be prepared for their senior studies. These remarks apply more particularly to such who, though quite proficient in the ordinary English branches, have not previously had any instruction in the elements of natural sciences, and who, aside from the practical, receive little or no theoretical instruction from their preceptors, but are frequently even left to select their reading at random. With constant work through the day, often till late in the evening, be it behind the counter or in the making of preparations, the fatigue is sufficient for preventing, or at least interfering with, systematic mental labor. Those who are thus situated would derive the greatest benefit from a division of their studies in such a manner as is contemplated by the modified courses, by which either the junior or senior course, or both, may be extended over two years.

*Dr. V. Podwissotzki*, whose labors in phytochemistry are well known, has accepted a call as Professor of Pharmacognosy and Pharmacy in the Imperial Russian University at Ka-an. He entered upon his new field of labor during the present winter.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*A Text-book of Medical Chemistry for Medical and Pharmaceutical Students and Practitioners.* By Elias H. Bartley, M. D., Adjunct Professor of Chemistry, and Lecturer on Diseases of Children in Long Island College Hospital, etc. With 40 illustrations. Philadelphia: P. Blakiston, Son & Co., 1885. 12mo, pp. 376. Price, \$2.50.

This work is not solely devoted to medical chemistry as might be inferred from the title; but it embraces the elements of chemical science, giving, however, prominence to those elements, compounds and reactions which are of special interest or importance to the physician, while those matters which have no direct bearing upon medicine, as a rule, are disposed of in a concise manner. Viewed from this standpoint, the scope as well as the arrangement of the work has been judiciously accomplished, and it will doubtless be found useful for the medical student.

Part I. gives a condensed account of chemical physics, and Part II. discusses briefly but lucidly the general chemical theories. The descriptive chemistry is found in Parts III. and IV., of which the former contains over 150 pages devoted to inorganic chemistry, and the latter about 80 pages devoted to organic chemistry. In most cases the medical properties of the different substances are briefly mentioned, as well as an outline of the treatment in cases of poisoning. A short chapter on poisons and their antidotes is appended to Part IV. The appendix contains various tables, most of which are of especial usefulness to physicians, and a glossary, explaining the meaning of many antiquated terms and such which are rarely used, but also many which are in daily use.

The definitions given in the glossary in some cases will scarcely be considered as satisfactory to the chemist or pharmacist; thus milk of lime is defined as being "whitewash," and spirit of hartshorn is said to be a "solution of ammonia in alcohol." Similar inaccuracies are occasionally met with also in the text. On page 189 it is stated that an aqueous solution of potassium iodide dissolves iodine, forming the compound "tincture" of iodine. On page 112 chlorine is said to be made from sulphuric acid, sodium chloride and "manganic oxide." PicROTOxin and salicin (p. 299) are enumerated among the alkaloids, and cinchonine is stated to be "insoluble" in ether (p. 298). These and some other vague or incorrect statements will doubtless be corrected in a future edition.

The illustrations are mostly contained in the two first parts of the work. The apparatus figured on page 114 is well adapted for the preparation of chlorine water, but not for that of hydrochloric acid. The manufacture of flowers of sulphur on a large scale has been singled out for illustration (p. 120), while other far more important products have not been similarly honored, although many of them may be conveniently prepared on a small scale.

*American Medicinal Plants;* an illustrated and descriptive guide to American plants. By C. F. Millspaugh, M. D. New York and Philadelphia: Boericke & Tafel. Nos. 11 to 15. Price, \$5.00.

Of the thirty plants presented in this fascicle, eight are of foreign origin, but either cultivated or naturalized in the United States, namely: Agrostemma,

Hippocastanum, Conium, Lappa, Cichorium, Plantago major, Verbascum and Stramonium. With the exception of some details—for instance the stamens of Kalmia latifolia—the execution of the plates, including the coloring, is good, though some of the drawings, like Eupatorium purpureum, would show to better advantage if made of larger size. The botanical descriptions are in the main reliable. The chemistry of the plants is in several instances incorrectly or vaguely given; thus xanthoxylin is stated to be identical with berberine; Drosera rotundifolia is said to contain alizarin; the alkaloid of burdock fruit is mentioned in connection with the root, etc.

*Drugs and Medicines of North America.* Cincinnati: J. U. & C. G. Lloyd. 4°.

This quarterly has now closed its second year by the publication of the eighth number for December, 1885, which is almost wholly devoted to cimicifuga. In this article we note especially the investigations made by Prof. Warder with the fresh and dried drug, and by Prof. Coblenz with the precipitated resin, showing that a crystalline principle announced by Conard, Beach and Falck (*Am. Jour. Phar.*, 1871, 151; 1876, 151; 1884, 459), cannot be obtained by the processes published, and confirming the results of F. H. Trimble (*Ibid.*, 1878, 468), according to which the principle obtained is resin-like and amorphous.

The natural order of Ranunculaceæ will be concluded in the next issue of this periodical, which deserves to be in the hands of every pharmacist and physician on account of the excellent critical investigations and the full information on North American medicinal and allied plants given therein. The numerous wood-cuts form a very valuable addition.

*Zum Hundertjährigen Geburtstag des Gründers der Firma Friedrich Jobst.* Stuttgart, 1886.

To the one hundredth anniversary of the birthday of the founder of the firm of Fridrich Jobst.

This is a handsome octavo volume, giving the biography of Fr. Jobst, who was born January 2, 1786, and died September 13, 1859. It is published in six languages, German, French, Italian, English, Greek and Russian; and is embellished with a steel engraving of Mr. Jobst, and phototypes of the establishments in Stuttgart and Feuerbach. Very numerous and quite important investigations have been made in the laboratories of this firm during the last twenty-five years by Mr. Julius Jobst, a member of the firm, and by Dr. O. Hesse, the director of the laboratories in Feuerbach; the titles of these investigations which were published, occupy over two pages of the volume.

*Henry Shaw School of Botany.* Inaugural Exercises in Memorial Hall, St. Louis Museum of Fine Arts, November 6, 1885. 8vo, pp. 24.

This school was founded by Mr. Shaw, who donated improved real estate, yielding over \$5000 revenue. The school is attached to the Washington University and has, for demonstration and investigation, the use of the Missouri Botanical Garden and Arboretum. Prof. Wm. Trelease, formerly of the University of Wisconsin, accepted the call for organizing and taking charge of the new school. The pamphlet before us contains his inaugural address. St. Louis may well be congratulated for this new institution, secured through the liberality of one of her citizens; also Prof. Trelease for the enlarged field of scientific labor thus opened to him.

*Sketch of the Botanical Work of the Rev. Moses A. Curtis, A. M., D. D., F. A. A. S.* By Thos. F. Wood. Raleigh, N.C., 1885. 8vo, pp. 31.

A very interesting sketch of the work done by this American botanist, whose portrait, a fine steel engraving, accompanies the pamphlet. Dr. Curtis was born in Massachusetts in 1808, and died in 1872. The paper was read before the Mitchell Society of the University of North Carolina.

*Experiments with Diffusion and Carbonatation at Ottawa, Kansas, Campaign of 1885.* By Harvey W. Wiley, Washington, D. C. 8vo, pp. 20.

The pamphlet is issued by the Department of Agriculture, and contains experiments on the manufacture of sugar from sorghum, made with the view of recovering a larger percentage of it than has hitherto been accomplished. This the author believes can be done after some difficulties, which are wholly mechanical, have been overcome.

*Lectures on Syphilis.* Delivered at the Chicago College of Physicians and Surgeons by G. Frank Lydston, M. D., etc., reported by Wm. A. Walker, A. M., M. D., Attending Physician to the West Side Dispensary. Chicago: A. M. Wood & Co., 1885, pp. 185. Price, \$1.25.

After having been published in *The Western Medical Reporter*, these lectures have been collected for republication in their present convenient form. The aim of the lecturer has been to present a plain and practical idea of the whole subject of syphilis as at present taught, together with practical points drawn from personal observation in hospital and dispensary practice. The nomenclature used in the prescriptions given, although in general that of the U. S. Pharmacopœia, lacks uniformity; thus we have Sarsa and Sarsaparilla, Kalium and Potassium, etc.

*An Experimental and Clinical Study of Air-Embolism.* By N. Senn, M. D., of Milwaukee, Wis., etc. Philadelphia: Collins, Printer, 1886. 8vo, pp. 121.

A reprint from the Transactions of the American Surgical Association, vol. iii, 1886.

*Transactions of the American Dermatological Association* at the ninth annual meeting held at Indian Harbor Hotel, Greenwich, Conn., August 26 to 28, 1885. Official Report of the Proceedings by the secretary, W. T. Alexander, A. M., M. D. New York: 1885, 8vo, pp. 47.

*Leçons sur l'étiologie et la prophylaxie de la fièvre jaune.* Par le Dr. Manuel Carmona y Valle, Professeur de Clinique interne à la Faculté de Médecine de Mexico, etc. Mexico: Imp. du Ministère des Travaux Publics, 1885. 8vo, pp. 299.

Lectures on the etiology and prophylaxis of yellow fever.

The lectures were delivered toward the close of the year 1884; but the researches detailed therein extend over a series of years. The botanical history of the fungus, met with in the various secretions of yellow fever patients, is fully illustrated upon two chromo-lithographic plates, and by six photographs magnifying the objects 500 or 1000 diameters.

*Hydronephthol, a new antiseptic.* By Geo. R. Fowler, M. D., Surgeon to St. Mary's General Hospital, Brooklyn. Pp. 31.

Reprinted from the *New York Medical Journal.* (See page 93 of this number.)

*Iritis: Its Relation to the Rheumatic Diathesis and its Treatment.* By Chas. J. Lundy, A. M., M. D., Professor of Diseases of the Eye, Ear and Throat in the Detroit College of Medicine. Pp. 10.

Reprinted from the *Physician and Surgeon.*

*Twelfth Annual Report of the Maternity Hospital, 734 South Tenth Street, Philadelphia.* Pp. 1<sup>4</sup>.

*Sixth Annual Report of the State Board of Health, Lunacy and Charity, of Massachusetts.* Supplement containing the report and papers on public health. Boston: 1885. 8vo, pp. 403.

The most interesting part to pharmacists and druggists is the report by Prof. B. F. Davenport, the analyst of drugs. We note the following results: of 33 samples of jalap (whole or powdered?) 12 yielded over 12 per cent. of resin (the report states alcoholic extract), and 11 less than 10 per cent. Of 5 samples of creasot, 3 consisted of carbolic acid. 14 (out of 15) samples of chloroform were the crude article. The saffron purchased was in all cases (5) safflower; it seems, therefore, as if in Boston the latter article was still demanded under the name of saffron the same as twenty years ago, when such a statement was made before the American Pharmaceutical Association.

*The Extra Pharmacopæia, with the Additions introduced into the British Pharmacopæia, 1885.* By Wm. Martindale, F. C. S., etc. Medical references and a therapeutic index of diseases and symptoms by W. Wynn Westcott, M. B., Lond., etc. Fourth edition. London: H. K. Lewis. Pp. 416.

After having noticed at some length two of the preceding editions of this work, it remains for us merely to note the publication of the fourth edition, and to state that the appearance of the new British Pharmacopœia rendered a complete revision necessary, in which the essential features of the former editions are preserved, the work including the facts, etc., known at the time of publication. A secondary list has been added, containing notices of American and other drugs which are rarely used in Europe. These drugs, if considered of sufficient importance for admission, it seems to us, would find a more convenient place if placed in regular alphabetical order with the others. Although the book has been increased by 86 pages, it is still suitable for the pocket.

*Introductory Address to the Fifth Lecture Course of the Albany College of Pharmacy.* Delivered October 5, 1885, by Willis G. Tucker, M. D., Professor of Chemistry. Pp. 14.

*Beiträge zur Kenntniss der Alkaloide des Aconitum Napellus.* Von Alexander Jürgens. Pp. 45.

Contributions to our knowledge of the alkaloids of Aconitum Napellus.

*Beitrag zum Nachweise des Chloralhydrats im Thierkörper.* Von Hildebert Baron Tiesenhausen. Pp. 30.

Contribution to the detection of chloral hydrate in the animal body.

*Beitrag zum Nachweis des Phenols im Thierkörper.* Von Woldemar Jacobson. Pp. 26.

Contributions to the detection of phenol in the animal body.

These three pamphlets contain inaugural essays from the University of Dorpat.

*Beitrag zur Chemie der Rhabarberwurzel.* Von Mag. pharm. M. Kubli.  
Contribution to the chemistry of rhubarb root.

A translation of this valuable essay was published in our December number.

*Ueber Untersuchung und Beurtheilung des Trinkwassers vom Standpunkte der Gesundheitspflege.* Von Prof. Dr. E. Reichard. Pp. 11.  
On the critical examination of potable water from the standpoint of hygiene.

*Water, preventable Disease and Filtration.* By P. A. Maignen. London. Pp. 63.

The following six pamphlets have reference to the Sixth International Pharmaceutical Congress which was held in Brussels, and the transactions of which were reported in our October number, 1885.

*Questions à discuter en Sections.*

*L'Enseignement Pharmaceutique.* Par L. De Nobele.

*Les Eaux Alimentaires.* Par M. Van de Vyvere.

*Projet d'une Pharmacopée Internationale.* Par Antoine de Waldheim. (The same also in the German language.)

*Sur l'Action comparée des différentes Aconitines.* Par J. Buntzen et H. P. Madsen.

*Le Filtrage.* Par P. A. Maignen.

*Address of the State Board of Health, and Vital Statistics of the Commonwealth of Pennsylvania to the People of Pennsylvania.* Pp. 7.

*Massachusetts State Agricultural Experiment Station.* Bulletins Nos. 17 and 18.

*Avena Sativa, in the treatment of Opium Addiction.* A therapeutical fraud, a delusion and a snare. By J. B. Mattison, M. D., Brooklyn, N. Y.  
Reprint from the *Medical Bulletin*, October, 1885.

*Voice in Singers.* By Carl H. Von Klein, A. M., M. D., of Dayton, O.  
Read before the Ohio State Medical Society.

*The American Practitioner* and the *Louisville Medical News* have been consolidated in a bi-weekly journal which, since the beginning of the present year and under the editorial management of Drs. Yandell and Cottell, the editors of the old journals, has been issued under the title of *American Practitioner and News*.

*The Chemist and Druggist,* a monthly journal published in London, England, has opened branch offices in Australia (Melbourne), and in the United States, the latter being located on Beekman street, in the city of New York.